

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 4,5 a
 Edition : 24.07.92
 Replaces : 05.92
 Test oil : ISO-4113
 Combination no. : 0 403 446 287
 Injection pump
 Pump designation : PES6MW100/320RS1219
 EP type number : 0 413 406 209
 Governor
 Governor design. : RQV350...1100MW118
 Governor no. : 0 420 083 249

Customer-spec. information
 Customer : VME

Engine : TD 61 CB

1st version kW : 115.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

A01

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 11.60...11.70
 Del. quantity cm³/ : 11.2...11.4
 100 s: (11.0...11.6)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 5.5...5.7
 Del. quantity cm³/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1200
 travel mm : 9.00...9.40
 2nd speed rpm : 1150
 travel mm : 8.70...8.90
 3rd speed rpm : 725
 travel mm : 3.70...4.30
 4th speed rpm : 350
 travel mm : 1.20...1.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 1000
 Del. quantity : 112.0...114.0
 1000 : (110.0...116.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 102...110

Testing:
 1st rack travel in: 10.60

Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.10...1.00

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.6

Testing:

Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 460...520

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.60...11.70
2nd speed rpm : 700
Rack travel in m: 12.40...12.60
3rd speed rpm : 1025
Rack travel in m: 11.80...12.10
4th speed rpm : 900
Rack travel in m: 12.20...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 700
Pressure hPa : 670
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 700

1st pressure hPa : -
Rack travel in m: 9.80...9.90
2nd pressure hPa : 250
Rack travel in m: 10.10...10.40
3rd pressure hPa : 1000
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

A02

Aneroid pressure h: 1000
Speed rpm : 700
Del.quantity cm3/ : 122.5...125.5
1000 s: (120.0...128.0)
Spread cm3 : 3.50
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 77.0...79.0
1000 s: (75.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 100

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...140.0
1000 s: (117.0...143.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC
 Edition : 31.07.92
 Replaces : 07.92
 Test oil : ISO-4113
 Combination no. : 0 403 446 308
 Injection pump
 Pump designation : PES6MW100/32ORS1198
 EP type number : 0 413 406 188
 Governor
 Governor design. : RQV350...1200MW46-47
 Governor no. : 0 420 083 277

Customer-spec. information
 Customer : NAVISTAR

Engine : DTA-466

1st version kw : 156.5
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35
 : (3.20...3.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 11.50...11.60

Del. quantity cm³/ : 12.2...12.4

100 s: (12.0...12.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1450

travel mm : 9.80...10.20

2nd speed rpm : 1250

travel mm : 7.90...8.10

3rd speed rpm : 550

travel mm : 3.10...3.70

4th speed rpm : 350

travel mm : 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 1200

Del. quantity : 122.0...124.0

1000 : (120.0...126.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 102...110

Testing:

1st rack travel in: 10.50
Speed rpm : 1290...1310
2nd rack travel in: 4.00
Speed rpm : 1405...1415
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...8.80
2nd pressure hPa : 245
Rack travel in m: 9.80...9.90
3rd pressure hPa : 395
Rack travel in m: 10.90...11.30

START CUT-OUT

Speed 1/min : 280 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1200
Del.quantity cm³/ : 118.5...122.5
1000 s: (116.5...124.5)

Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 68.0...71.0
1000 s: (66.0...73.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1290...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...170.0
1000 s: (125.0...175.0)
Rack travel in mm : 12.50...13.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: IHC #1819888C91
Only perform pump setting with original
overflow valve without IH hose and
restrictor 1.2 mm diameter.

In unlatched condition, do not
operate greater than n = 500 1/min

Set shutoff stop 1.5...2.0 mm before
shutoff.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 403 446 313
 Injection pump
 Pump designation : PES6MW100/72ORS1228
 EP type number : 0 413 406 218
 Governor
 Governor design. : RQV325...1350MW127K
 Governor no. : 0 420 083 988

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8050.45.6200

1st version kW : 167.0
 Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.20...12.30

Del.quantity cm³/ : 11.5...11.7

100 s: (11.3...11.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 6.5...6.7

Del.quantity cm³/ : 2.0...2.4

100 s: (1.7...2.6)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1400

travel mm : 10.00...10.40

2nd speed rpm : 825

travel mm : 4.90...5.10

3rd speed rpm : 400

travel mm : 2.90...3.50

4th speed rpm : 325

travel mm : 1.50...1.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 115.5...117.5

1000 : (113.5...119.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 120...128

Testing:

1st rack travel in: 12.10
Speed rpm : 1420...1430
2nd rack travel in: 4.00
Speed rpm : 1515...1545
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 78...86
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 200
Minimum rack travel: 10.00
Speed rpm : 325
Rack travel in mm : 6.50...6.70

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 12.20...12.30
2nd speed rpm : 1200
Rack travel in m: 13.40...13.60
3rd speed rpm : 900
Rack travel in m: 12.60...12.80
4th speed rpm : 1350
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1200
Pressure hPa : -
Rack travel mm : 8.90...9.10

Measurement

Speed 1/min : 1200
1st pressure hPa : 450
Rack travel in m: 11.50...11.60
2nd pressure hPa : 800
Rack travel in m: 12.50...12.80
3rd pressure hPa : 1200
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1200

Del.quantity cm3/ : 120.0...123.0
1000 s: (117.5...125.5)
Spread cm3 : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 71.0...73.0
1000 s: (69.0...75.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1420...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 40.0...60.0
1000 s: (37.0...63.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 20.0...24.0
1000 s: (17.5...26.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM
Edition : 31.07.92
Replaces : -
Test oil : ISO-4113

Combination no. : 0 403 466 129

Injection pump
Pump designation : PES6MW100/120RS1137-
2
EP type number : 0 413 406 180
Governor
Governor design. : RSV550...1100MW2A319
-18
Governor no. : 0 420 085 205

Customer-spec. information
Customer : CUMMINS

Engine : 6 CTA

1st version kW : 179.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

A07

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Phasing :
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.90...13.00

Del. quantity cm³/ : 13.0...13.2
100 s: (12.8...13.4)

Spread cm³ : 0.3
100 s: (0.6)

2nd speed rpm : 550.0
Rack travel in mm : 6.2...6.4
Del. quantity cm³/ : 1.8...2.2
100 s: (1.6...2.5)
Spread cm³ : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : 2.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del. quantity : 130.5...132.5
1000 : (128.5...134.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 84...92

Setting point:

Speed rpm : 800
Rack travel in mm : 0.6

Testing:

1st rack travel in: 11.90
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 65...73
Setting point w/out bumper spring
Speed rpm : 550
Rack travel in mm : 5.8

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 550
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 520...580

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (127.0...153.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 550
Rack travel in mm : 6.20...6.40
Del.quantity cm3/ : 18.5...22.5
1000 s: (16.0...25.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: CUM #3923540

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,

cylinder 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 403 466 130
 Injection pump
 Pump designation : PES6MW100/12ORS1137-
 2
 EP type number : 0 413 406 180
 Governor
 Governor design. : RSV550...1100MW2A335
 -4
 Governor no. : 0 420 085 206

Customer-spec. information
 Customer : CUMMINS

Engine : 6 CTA

1st version kW : 179.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 101
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,6
 Test lines : 1 680 750 008
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

A09

Test pressure, bar: 30...32
 Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4
 Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 12.90...13.00
 Del. quantity cm³/ : 13.0...13.2
 100 s : (12.8...13.4)
 Spread cm³ : 0.3
 100 s : (0.6)
 2nd speed rpm : 550.0
 Rack travel in mm : 6.2...6.4
 Del. quantity cm³/ : 1.8...2.2
 100 s : (1.6...2.5)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 2.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 900
 Del. quantity : 130.5...132.5
 1000 : (128.5...134.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 84...92

Setting point:
Speed rpm : 800
Rack travel in mm : 0.6

Testing:
1st rack travel in: 11.90
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1220...1230
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1300
Speed rpm : 0.30...1.70

LOW IDLE 1
Control Lever
position degrees: 65...73
Setting point w/out bumper spring
Speed rpm : 550
Rack travel in mm : 5.8

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 550
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 520...580

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.90...13.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.30
2nd pressure hPa : 475
Rack travel in m: 12.40...12.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 120.0...122.0
1000 s: (118.0...124.0)

BREAKAWAY

1st version

A10

1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (127.0...153.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 550
Rack travel in mm : 6.20...6.40
Del.quantity cm³/ : 18.5...22.5
1000 s: (16.0...25.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:
: CUM #3923541

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE5,6B1
 Edition : 24.07.92
 Replaces : 11.91
 Test oil : ISO-4113
 Combination no. : 0 403 474 021
 Injection pump
 Pump designation : PES4MM100/720RS1181
 EP type number : 0 413 404 107
 Governor
 Governor design. : RSV400...1000W1A348
 Governor no. : 0 420 085 183

Customer spec. information
 Customer : LIEBHERR

Engine : D914T

1st version kW : 100.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 049

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 10.70...10.90
 Del. quantity cm³/ : 13.0...13.2
 100 s: (12.8...13.4)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 6.0...6.5
 Del. quantity cm³/ : 2.0...2.4
 100 s: (1.7...2.6)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Aneroid pressure h: 1000
 Del. quantity : 130.0...132.0
 1000 : (128.0...134.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 104...112

Setting point:
 Speed rpm : 800
 Rack travel in mm : 0.6

Testing:

1st rack travel in: 9.70
Speed rpm : 1020...1030
2nd rack travel in: 4.00
Speed rpm : 1060...1075
3rd rack travel in: 4.00
Speed rpm : 1070...1085
4th rack travel in: 1200
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 76...84
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.50...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.70...10.90
2nd speed rpm : 500
Rack travel in m: 10.70...10.90
5th speed rpm : 450
Rack travel in m: 11.90...12.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.20...10.40

Measurement

Speed 1/min : 500
1st pressure hPa : 530
Rack travel in m: 10.50...10.60
2nd pressure hPa : 1000
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 500
Del.quantity cm3/ : 123.5...126.5
1000 s: (121.0...129.0)

Spread cm3 : 3.50
1000 s: (7.0)
Aneroid pressure h: 1000
Speed rpm : 800
Del.quantity cm3/ : 130.0...133.0
1000 s: (127.5...135.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 109.0...111.0
1000 s: (107.0...113.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.70
Speed rpm : 1020...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (127.0...143.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.00...6.50
Del.quantity cm3/ : 20.0...24.0
1000 s: (17.5...26.5)
Spread cm3 : 3.50
1000 s: (5.00)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 24.07.92
 Replaces : 02.92
 Test oil : ISO-4113
 Combination no. : 0 403 476 116
 Injection pump
 Pump designation : PES6MW100/720RS1131
 EP type number : 0 413 406 123
 Governor
 Governor design. : RSV350...1300MWOA329
 -14
 Governor no. : 0 420 085 192

Customer-spec. information
 Customer : MB-NFZ

Engine : OM 366 A

1st version kW : 125.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 089
 Outside diameter
 x wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32
 Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1280
 Rack travel in mm : 10.50...10.60
 Del. quantity cm³/ : 8.8...9.0
 100 s : (8.6...9.2)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 5.0...5.5
 Del. quantity cm³/ : 1.0...1.4
 100 s : (0.7...1.6)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1280
 Aneroid pressure h: 800
 Del. quantity : 88.0...90.0
 1000 : (86.0...92.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 110...118

Setting point:
 Speed rpm : 800
 Rack travel in mm : 0.6

Testing:
 1st rack travel in: 9.50
 Speed rpm : 1330...1335 *
 2nd rack travel in: 4.00

Speed rpm : 1410...1423
4th rack travel in: 1550
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 350
Rack travel in mm : 5.00...5.50
Rack travel in mm : 2.00
Speed rpm : 420...480

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1280
Rack travel in m: 10.50...10.60
2nd speed rpm : 800
Rack travel in m: 11.20...11.30
3rd speed rpm : 1100
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 9.20...9.30

Measurement

Speed 1/min : 500
1st pressure hPa : 300
Rack travel in m: 9.70...9.90
2nd pressure hPa : 470
Rack travel in m: 10.50...10.70
3rd pressure hPa : 800
Rack travel in m: 11.20...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 800
Speed rpm : 800
Del.quantity cm³/ : 88.0...91.0
1000 s: (85.5...93.5)

Spread cm³ : 5.00
1000 s: (7.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 49.0...51.0
1000 s: (47.0...53.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.50
Speed rpm : 1330...1335

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.00...5.50
Del.quantity cm³/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Test hydr. locking device for starting
with 800...1200 hPa air pressure.

* Read off speed set under 1.
Add 80...88 min⁻¹ to this speed. The
control-rod travel under 2. must be
attained with the calculated speed
profile.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC
 Edition : 24.07.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 403 476 121

Injection pump
 Pump designation : PES6MW100/32ORS1198-1

EP type number : 0 413 406 211
 Governor
 Governor design. : RSV350...1250MW2A347-1

Governer no. : 0 420 085 199

Customer-spec. information
 Customer : NAVISTAR

Engine : DT-466

1st version kW : 172.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

A15

Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35
 : (3.20...3.40)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Phasing :
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.10...12.20

Del. quantity cm³/ : 13.2...13.4
 100 s: (13.0...13.6)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 4.9...5.1
 Del. quantity cm³/ : 1.5...1.9
 100 s: (1.3...2.2)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h: 900
 Del. quantity : 132.5...134.5
 1000 : (130.5...136.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 100...108

Setting point:

Speed rpm : 800
Rack travel in mm : 0.6

Testing:

1st rack travel in: 11.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1345...1355
3rd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 350
Rack travel in mm : 4.90...5.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 9.20...9.30
2nd pressure hPa : 260
Rack travel in m: 10.20...10.30
3rd pressure hPa : 500
Rack travel in m: 11.40...11.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 80.5...84.5
1000 s: (78.5...86.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.90...5.10
Del. quantity cm³/ : 15.5...19.5
1000 s: (13.0...22.0)
Spread cm³ : 3.50
1000 s: (5.00)

Remarks:

: IHC #1819527091

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 03.92
 Test oil : ISO-4113
 Combination no. : 9 400 087 429
 Injection pump
 Pump designation : PES6P120A720RS3256-3
 EP type number : 9 400 087 079
 Governor
 Governor design. : RQV300...1300PA963
 Governor no. : 9 420 080 283

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 156.6
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del. quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.80...1.30

2nd speed rpm : 660

travel mm : 3.80...4.30

3rd speed rpm : 960

travel mm : 5.20...5.70

4th speed rpm : 1357

travel mm : 8.00...8.50

5th speed rpm : 1492

travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1385

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 107...115

Testing:
1st rack travel in: 10.80
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 11.80...12.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 300
Rack travel in m: 10.10...10.30
3rd pressure hPa : 600
Rack travel in m: 11.30...11.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 157.0...159.0
1000 s: (154.0...162.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 141.0...145.0
1000 s: (138.0...148.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 03.92
 Test oil : ISO-4113
 Combination no. : 9 400 087 430
 Injection pump
 Pump designation : PES6P120A720RS3256-3
 EP type number : 9 400 087 079
 Governor
 Governor design. : RQV300...13G0PA963-1
 Governor no. : 9 420 080 284

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 171.5
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80...5.40

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30

2nd speed rpm : 660
 travel mm : 3.80...4.30

3rd speed rpm : 960
 travel mm : 5.20...5.70

4th speed rpm : 1357
 travel mm : 8.00...8.50

5th speed rpm : 1492
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1385
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del. quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 107...115

Testing:
1st rack travel in: 11.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1430...1460
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.60...12.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 300
Rack travel in m: 10.10...10.30
3rd pressure hPa : 700
Rack travel in m: 11.70...11.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

A20

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del. quantity cm³/ : 177.0...179.0
1000 s: (174.0...182.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del. quantity cm³/ : 159.0...163.0
1000 s: (156.0...166.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 100.0...120.0
1000 s: (96.0...124.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del. quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113
 Combination no. : 9 400 087 431
 Injection pump
 Pump designation : PES6P120A72ORS3256-2
 EP type number : 9 400 087 080
 Governor
 Governor design. : RQV300...1300PA963-2
 Governor no. : 9 420 080 285

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kw : 141.7
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 4.80... 5.40

Del.quantity cm³/ : 1.7...2.0

100 s: (1.4...2.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.5

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.9)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30

2nd speed rpm : 660
 travel mm : 3.80...4.30

3rd speed rpm : 960
 travel mm : 5.20...5.70

4th speed rpm : 1357
 travel mm : 8.00...8.50

5th speed rpm : 1492
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1385
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 9.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1415...1445
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 10.70...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.40...9.70
2nd pressure hPa : 250
Rack travel in m: 9.90...10.10
3rd pressure hPa : 340
Rack travel in m: 10.20...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

A22

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 140.0...142.0
1000 s: (137.0...145.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 115.0...119.0
1000 s: (112.0...122.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...58.0
1000 s: (53.0...61.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113
 Combination no. : 9 400 087 450
 Injection pump
 Pump designation : PES6P120A720RS3256-2
 EP type number : 9 400 087 080
 Governor
 Governor design. : RQV300...1300FA978
 Governor no. : 9 420 080 296

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 366 LA

1st version kW : 126.8
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 20.00...21.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 4.80...5.40
 Del. quantity cm³/ : 1.7...2.0
 100 s: (1.4...2.3)
 Spread cm³ : 0.2
 100 s: (0.3)

2nd speed rpm : 300.0
 Rack travel in mm : 7.2...7.5
 Del. quantity cm³/ : 1.0...1.6
 100 s: (0.7...1.9)
 Spread cm³ : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30
 2nd speed rpm : 660
 travel mm : 3.80...4.30
 3rd speed rpm : 960
 travel mm : 5.20...5.70
 4th speed rpm : 1357
 travel mm : 8.00...8.50
 5th speed rpm : 1492
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1385
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Del.quantity : 17.0...20.0
1000 : (14.0...23.0)
Spread cm³ : 2.00
1000 : (3.00)

RATED SPEED

1st version
Control lever
position degrees: 106...114

Testing:
1st rack travel in: 9.60
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1415...1445
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 73...81

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.30...7.50

CONSTANT REGULATION
Speed rpm : 300...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 10.70...10.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.10
2nd pressure hPa : 350
Rack travel in m: 10.10...10.30
3rd pressure hPa : 420
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1300
Del.quantity cm³/ : 140.0...142.0
1000 s: (137.0...145.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 1200
Speed rpm : 800
Del.quantity cm³/ : 115.0...119.0
1000 s: (112.0...122.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 63.0...65.0
1000 s: (60.0...68.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.60
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...110.0
1000 s: (86.0...114.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.20...7.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.0...19.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Start-of-delivery blocking takes place
with piston stroke 4.05 mm (as of BCD)
at no. 1 cylinder.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 10,1 e
 Edition : 24.07.92
 Replaces : 7.92
 Test oil : ISO-4113
 Combination no. : 9 400 231 013
 Injection pump
 Pump designation : PES6P110A720RS379
 EP type number : 9 410 231 001
 Governor
 Governor design. : RSV400...1050PO/457D
 R
 Governor no. : 9 420 234 015

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6619 T

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 457 413 010
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X3.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29
 Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050
 Rack travel in mm : 10.20...10.30
 Del. quantity cm³/ : 13.5...13.7
 100 s: (13.3...13.9)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.8...6.0
 Del. quantity cm³/ : 2.1...2.7
 100 s: (1.9...2.9)
 Spread cm³ : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Aneroid pressure h: 900
 Del. quantity : 135.0...137.0
 1000 : (133.0...139.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 43...51
 Testing:
 1st rack travel in: 9.20
 Speed rpm : 1095...1105
 3rd rack travel in: 6.20
 Speed rpm : 1135...1165
 4th rack travel in: 1200

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.00
Speed rpm : 520...530

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 10.20...10.30
2nd speed rpm : 630
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 550
Pressure hPa : 900
Rack travel mm : 10.80...11.00

Measurement

Speed 1/min : 550
1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 373
Rack travel in m: 10.50...10.60
3rd pressure hPa : 247
Rack travel in m: 9.90...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 630
Del.quantity cm³/ : 145.0...149.0
1000 s: (143.0...151.0)
Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 113.5...121.5
1000 s: (111.5...123.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 190.0...210.0
1000 s: (185.0...215.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1100
Rack travel in mm : 6.10...6.30
Del.quantity cm³/ : 45.0...55.0
1000 s: (42.0...48.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 21.0...27.0
1000 s: (19.0...29.0)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10.50 mm.

Starting/full-load transition speed from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ALO 13.8 h
 Edition : 11.8.92
 Replaces : 3.87
 Test oil : ISO-4113
 Combination no. : 9 400 231 077
 Injection pump
 Pump designation : PES6P120A32ORS454
 Governor
 Governor design. : RSV600...1100P2/482R
 Governor no. : 9 420 234 015

Customer-spec. information
 Customer : ALLIS-CHALMERS

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45
 Overflow valve : 1 457 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 443 022
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 060
 Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.00X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.45...3.55
 : (3.40...3.60)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4
 Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

A27

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 11.20...11.40
 Del.quantity cm³/ : 22.1...22.3
 100 s : (22.1...22.3)
 Spread cm³ : 0.8
 100 s : (-)
 2nd speed rpm : 600
 Rack travel in mm : 5.1...5.3
 Del.quantity cm³/ : 2.9...3.7
 100 s : (-)
 Spread cm³ : 0.7
 100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 221.0...223.0
 1000 : (221.0...223.0)
 Spread cm³ : 8.00
 1000 : (-)

RATED SPEED

1st version
 Control lever
 position degrees: 43...51

Testing:
 1st rack travel in: 10.30
 Speed rpm : 1145...1155
 2nd rack travel in: 4.00
 Speed rpm : 1210...1240
 4th rack travel in: 1300
 Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
 position degrees: 25...33
 Setting point w/out bumper spring

Speed rpm : 600
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 655...7715

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1000
Del.quantity cm³/ : 217.0...223.0
1000 s: (214.0...227.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.30
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...170.0
1000 s: (-)
Rack travel in mm : 21.00

HIGH IDLE

1st version

Speed rpm : 1215
Del.quantity cm³/ : 43.0...53.0
1000 s: (-)

LOW IDLE

Speed rpm : 600
Del.quantity cm³/ : 29.0...37.0
1000 s: (-)

Remarks:

:

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 075 929
 Injection pump
 Pump designation : PES5M55C320RS177
 EP type number : 0 410 055 974
 Governor
 Governor design. : RSF340/2300M64-18
 Governor no. : 0 420 021 159

Cust. part no. : T8

Customer-spec. information
 Customer : MB-PKW

Engine : OM602A-USA ALDA

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 1 688 901 111

Opening
 pressure, bar : 147...150

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

BO1

Rack travel in mm : 20.00...22.00
 Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del.quantity cm³/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 315.0

Rack travel in mm : 5.4...5.6

Del.quantity cm³/ : 0.6...0.7

100 s: (0.5...0.9)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.7...52.7

1000 : (50.7...53.7)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever
 position degrees: 50...0

3rd rack travel in: 8,5...8,9

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER
 POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1

Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 315
Rack travel in mm : 5.5

Testing:

Speed rpm : 220
Minimum rack trave: 8.00
Speed rpm : 315
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.50
Speed rpm : 520...620
Speed rpm : 1000
Maximum rack trave: 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 380
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 1600
Rack travel in m: 13.00...13.20
3rd speed rpm : 2200
Rack travel in m: 12.20...12.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.30...0.70

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.40...3.60
2nd pressure hPa : 750
Rack travel in m: 4.90...5.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 48.5...50.5
1000 s: (47.5...51.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 54.0...0.0
1000 s: (54.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.50...8.90
Del.quantity cm³/ : 30.0...34.0
1000 s: (29.0...35.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 315
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 6.0...7.0
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop

Speed rpm : 340
Rack travel in mm : (12,7...14,1)
Del.quantity cm³/ : -
1000 s: (42,5...50,5)
Current A : 1,8

Control lever at full-load stop

Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current
short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 54,0 1,8A

Remarks:

:
Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 16.8°...17.2°
(16.7...17.3°) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

Pin projection = 16.60...16.70 mm

Testing and adjusting the control-rod-
travel sensor with evaluation circuit
KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel
sensor

At a speed of 1000 1/min, set fuel
delivery at 21,5...22,5 (20,5...23,5)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
U = 1.633...1.639 (1.635...1.637) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.457...
2.517 V must be attained.

CORRECTION OF INJECTED-FUEL QUANTITY

-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Sliding sleeve pre-travel = 6.5 mm

CHECKING THE IDLE-SPEED AUXILIARY
SPRING CUTOFF

-Control-lever position 35,5°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
-Control-lever position 33.0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover

point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With n = 315 1/min. and pu = 450 mbar,
control rod must move quickly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
Edition : 01.09.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 075 930
Injection pump
Pump designation : PES5M55C320RS177
EP type number : 0 410 055 974
Governor
Governor design. : RSF340/2300M74-1
Governor no. : 0 420 021 156

Cust. part no. : T8

Customer-spec. information
Customer : MB-PKW

Engine : OM602A-D/A (KAT)

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 1 688 901 111

Opening
pressure, bar : 147...150

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
: (1.65...1.85)

B04

Rack travel in mm : 20.00...22.00
Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del. quantity cm3/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 345.0

Rack travel in mm : 5.5...5.7

Del. quantity cm3/ : 0.6...0.7

100 s: (0.5...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del. quantity : 51.7...52.7

1000 : (50.7...53.7)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever
position degrees: 50...0

3rd rack travel in: 8,5...8,9

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER
POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1
Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 345
Rack travel in mm : 5.6

Testing:

Speed rpm : 150
Minimum rack trave: 10.0+1
Speed rpm : 345
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.50
Speed rpm : 550...650
Speed rpm : 1000
Maximum rack trave: 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 1600
Rack travel in m: 13.00...13.20
3rd speed rpm : 2200
Rack travel in m: 12.20...12.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.30...0.70

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.40...3.60
2nd pressure hPa : 750
Rack travel in m: 4.90...5.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 48.5...50.5
1000 s: (47.5...51.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 54.0...0.0
1000 s: (54.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.50...8.90
Del.quantity cm³/ : 30.0...34.0
1000 s: (29.0...35.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 345
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 6.0...7.0
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop

Speed rpm : 370
Rack travel in mm : (10,0...11,4)
Del.quantity cm³/ : -
1000 s: (29,0...37,0)
Current A : 1,8

Control lever at full-load stop

Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current
short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 54,0 1,8A

Remarks:

ADJUSTMENT OF ACTIVE BUCKING DAMPING (ARD)
Control lever on full-load stop. At $n = 1000$ min
 $I = 2.5$ A, difference in delivery referenced to
delivery (5.6...7.6) ccm/1000 strokes.

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = $16.8^\circ \dots 17.2^\circ$
($16.7 \dots 17.3^\circ$) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

CORRECTION OF INJECTED-FUEL QUANTITY
-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Pin projection = 16.60...16.70 mm

Testing and adjusting the control-rod-
travel sensor with evaluation circuit
KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Adjustment of the control-rod travel
sensor

At a speed of 1000 1/min, set fuel
delivery at 21,5...22,5 (20,5...23,5)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 1.633 \dots 1.639$ (1.635...1.637) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.457...
2.517 V must be attained.

Sliding sleeve pre-travel = 4.7 mm

CHECKING THE IDLE-SPEED AUXILIARY

B06

SPRING CUTOFF

-Control-lever position $44,5^\circ$ max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
-Control-lever position $42,0^\circ$,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 075 935
 Injection pump
 Pump designation : PES5M55C320RS158-1
 EP type number : 0 410 055 979
 Governor
 Governor design. : RSF340/2300M65-4
 Governor no. : 0 420 021 144

Cust. part no. : T8

Customer-spec. information
 Customer : MB-FKW

Engine : DM602A-ECE ALDA

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 901 111

Opening
 pressure, bar : 144...150

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
 : (2.15...2.35)

Rack travel in mm : 20.00...22.00
 Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del.quantity cm³/ : 5.2...5.3

100 s : (5.1...5.4)

Spread cm³ : 0.2

100 s : (0.3)

2nd speed rpm : 315.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 0.6...0.7

100 s : (0.5...1.0)

Spread cm³ : 0.1

100 s : (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 52.5...53.5

1000 : (51.5...54.5)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever
 position degrees: 50...0

3rd rack travel in: 8,1...8,5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER
 POSITION

Speed rpm : 1000

Rack travel in mm : 1,7...1,8

LOW IDLE 1

Control lever

position degrees: 8...12
Setting point w/out bumper spring
Speed rpm : 315
Rack travel in mm : 5.4

Testing:

Speed rpm : 220
Minimum rack travel: 8.00
Speed rpm : 315
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.50
Speed rpm : 540...640
Speed rpm : 1000
Maximum rack travel: 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 380
Rack travel in mm : 4,20...4,40
: (4,10...4,50)

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.90...14.00
2nd speed rpm : 1600
Rack travel in m: 13.10...13.30
3rd speed rpm : 2200
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.50...0.90

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.90...4.20
2nd pressure hPa : 750
Rack travel in m: 5.70...6.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 52.5...53.5
1000 s: (51.5...54.5)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200

Del.quantity cm³/ : 51.0...52.5
1000 s: (50.0...53.5)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm³/ : 34.0...35.0
1000 s: (33.0...36.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 53.0...0.0
1000 s: (53.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.10...8.50
Del.quantity cm³/ : 29.0...33.0
1000 s: (28.0...34.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 315
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 6.5...7.5
1000 s: (5.5...10.0)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed rpm : 340
Rack travel in mm : (12,6...14,0)
Del.quantity cm³/ : -
1000 s: (42,0...50,0)
Current A : 1,8

Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 53,0 1,8A

Remarks:

Sliding sleeve pre-travel = 6.5 mm

CHECKING THE IDLE-SPEED AUXILIARY
SPRING CUTOFF

- Control-lever position 35,5°, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
- Control-lever position 33.0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

- Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 19.3°...19.7°
(19.2...19.8°) angular displacement of
cam following start of delivery of
cylinder no. 1.
Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 01.09.92
 Replaces : 14.10.91
 Test oil : ISO-4113

Combination no. : 0 400 076 968

Injection pump
 Pump designation : PES6M55C32ORS178
 EP type number : 0 410 056 986
 Governor
 Governor design. : RSF315/2125M64-13
 Governor no. : 0 420 021 128

Customer-spec. information
 Customer : MB-PKW

Engine : OM603A D35 USA ALDA

1st version kw : 100.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

Rack travel in mm : 20.00...22.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 5.8...5.9

100 s : (5.7...6.0)

Spread cm³ : 0.2

100 s : (0.3)

2nd speed rpm : 290.0

Rack travel in mm : 5.6...5.9

Del. quantity cm³/ : 0.5...0.6

100 s : (0.5...0.9)

Spread cm³ : 0.1

100 s : (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del. quantity : 58.0...59.0

1000 : (57.0...60.0)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 6.5...6.9

Speed rpm : 2300

4th rack travel in: 2700

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER

POSITION

Speed rpm : 1000

Rack travel in mm : 1,4...1,5

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

Speed rpm : 290
Rack travel in mm : 5.7

Testing:

Speed rpm : 200
Minimum rack travel: 7.00
Speed rpm : 290
Rack travel in mm : 5.60...5.90
Speed rpm : 1000
Maximum rack travel: 1.50

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 3.60...3.70
: (3.50...3.80)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in mm : 13.70...13.80
2nd speed rpm : 1600
Rack travel in mm : 12.70...12.90
3rd speed rpm : 2000
Rack travel in mm : 11.30...11.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.40...0.80

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in mm : 3.50...3.70
2nd pressure hPa : 750
Rack travel in mm : 5.00...5.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm³/ : 54.5...56.0
1000 s: (53.5...57.0)
Spread cm³ : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2000
Del.quantity cm³/ : 49.0...51.0
1000 s: (48.0...52.0)
Spread cm³ : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050

Speed rpm : 1000
Del.quantity cm³/ : 38.0...39.0
1000 s: (37.0...40.0)
Spread cm³ : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 1000
Del.quantity cm³/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1850
Speed rpm : 2300
Rack travel in mm : 6.50...6.90
Del.quantity cm³/ : 22.0...26.0
1000 s: (21.0...27.0)
Spread cm³ : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 290
Rack travel in mm : 5.60...5.90
Del.quantity cm³/ : 5.5...6.5
1000 s: (5.0...9.5)
Spread cm³ : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE
REGULATION (ELR)

Control lever at idle stop

Speed rpm : 315
Rack travel in mm : (11,7...13,1)
Del.quantity cm³/ : -
1000 s: (41,0...49,0)
Current A : 1,8

Control lever at full-load stop

Speed rpm : 2700
Rack travel in mm : 0,0...1,0
Current
short-duration A : 3,0
Starting test
Speed rpm : 100
Del.quantity cm³/ : -
min. 1000 s: 52,0 1,8A

Remarks:

Start-of-delivery sensor system:

adjustment and blocking with device
KDEP 1077 = 16.8°...17.2°
(16.7...17.3°) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1° angular
displacement of cam

CORRECTION OF INJECTED-FUEL QUANTITY
-Set max. change plus/minus 0.75 mm
control-rod travel at correction
screw on ALDA pressure box.

Adjustment of the control-rod travel
sensor

At a speed of 1000 1/min, set fuel
delivery at 22.0...23.0 (21.0...24.0)
ccm/1000 strokes with control lever.
Shift control-rod-travel sensor until
 $U = 1.633...1.639$ (1.635...1.637) V is
indicated. Tighten fastening screws
with 1...2 Nm. Control lever to full-
load stop; voltage value of 2.472...
2.532 V must be attained.

Testing and adjusting the control-rod-
travel sensor with evaluation circuit
KDEP-P400

Receiving inspection

Shift control lever to full-load stop.
Set 13.5 V at stabilizer. Apply
1850 hPa to ALDA. Run up to speed of
1000 1/min; a voltage of 2.457...2.517
(2.427...2.547) V must be displayed
on the digital voltmeter.

Sliding sleeve pre-travel = 5.5 mm

**CHECKING THE IDLE-SPEED AUXILIARY
SPRING CUTOFF**

-Control-lever position 44,5° max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
-Control-lever position 42,0°,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

CHECKING THE PNEUMATIC SHUTOFF BOX

-Control lever up against idle stop.
At $n = 290$ 1/min and $p_u = 450$ mbar
control rod must move briskly to
control-rod travel = 0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AA
 Injection pump
 Pump designation : PE12A95D/10LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RGV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kw : 184.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B13

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.60...11.70

Del. quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 10.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 773...788

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:
:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AB
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 176.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B15

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.60...11.70

Del. quantity cm³/ : 10.2...10.4

100 s : (10.0...10.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s : (0.1...1.1)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 25...29

Testing:

1st rack travel in: 10.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 773...788

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 094AC

Injection pump
 Pump designation : PE12A950610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 162.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B17

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.30...10.40

Del. quantity cm³/ : 9.1...9.3

100 s : (8.9...9.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s : (0.1...1.1)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.30

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm3/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm3 : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AD
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750A9996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 159.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B19

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : i

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 88.0...91.0

1000 : (86.0...92.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AE
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB996L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 154.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.90...10.00

Del. quantity cm³/ : 8.2...8.4

100 s : (8.0...8.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s : (0.1...1.1)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.90

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.90
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm³/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 094AF
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV750AB995L
 Governor no. : 0 420 212 091

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 148.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B23

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.60...9.70

Del. quantity cm³/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.6...5.7

Del. quantity cm³/ : 0.4...0.9

100 s: (0.1...1.1)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 770...785

START CUT-OUT

Speed 1/min : 660 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.50

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.60...5.70
Del.quantity cm3/ : 4.0...9.0
1000 s: (1.5...11.5)
Spread cm3 : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 101AA
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1056D
 L
 Governor no. : 0 420 214 245

Customer-spec. information
 Customer : KHD

Engine : BF12L413FW

1st version kW : 277.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 10.50...10.60
 Del. quantity cm³/ : 9.4...9.6
 100 s : (9.2...9.8)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h: 700
 Del. quantity : 94.0...96.0
 1000 : (92.0...98.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 9.40
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00

Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 10...18

Testing:

Speed rpm : 100
Minimum rack travel: 3.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 310...380

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.50...10.60
2nd speed rpm : 775
Rack travel in m: 10.50...10.60
3rd speed rpm : 930
Rack travel in m: 10.70...10.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm: 10.50...10.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.30...10.40
2nd pressure hPa : 329
Rack travel in m: 10.60...10.70
3rd pressure hPa : 280
Rack travel in m: 10.40...10.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 775
Del. quantity cm³/ : 98.5...101.5
1000 s: (96.0...104.0)
Aneroid pressure h: -

Speed rpm : 500
Del. quantity cm³/ : 77.0...79.0
1000 s: (75.0...81.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.40...14.60

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AA
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 247.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

B27

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del. quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 9.60...9.70

2nd speed rpm : 650

Rack travel in m: 10.20...10.30

3rd speed rpm : 850

Rack travel in m: 9.70...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 85.5...88.5

1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AB
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kw : 235.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

CO1

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.3...8.5

100 s: (8.1...8.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 83.0...85.0

1000 : (81.0...87.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.30

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control lever
position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AC
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governer no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kw : 224.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1235...1265

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 9.00...9.10

2nd speed rpm : 650

Rack travel in m: 9.60...9.70

3rd speed rpm : 850

Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del. quantity cm³/ : 75.5...78.5

1000 s: (73.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...14.70

ZOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AD
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 220.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135--
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.80...8.90

Del. quantity cm³/ : 7.6...7.8

100 s : (7.4...8.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

:

LOW IDLE 1

Control lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.80...8.90

2nd speed rpm : 650

Rack travel in m: 9.40...9.50

3rd speed rpm : 850

Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del. quantity cm³/ : 71.5...74.5

1000 s: (69.0...77.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 640 106AE
Injection pump
Pump designation : PE12A95D610LS2453
EP type number : 0 410 690 998
Governor
Governor design. : RQV300...1150AB1083L
Governor no. : 0 420 212 114

Customer-spec. information
Customer : KHD

Engine : F12L413F

1st version kW : 213.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00

C07

Firing order : 1- 4- 9- 8- 5- 2-
11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
180-195-240-255-300-
315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.60...8.70

Del.quantity cm3/ : 7.3...7.5

100 s: (7.1...7.7)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 73.0...75.0

1000 : (71.0...77.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.60

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1230...1260

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control Lever

position degrees: 12...20

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.60...8.70

2nd speed rpm : 650

Rack travel in m: 9.20...9.30

3rd speed rpm : 850

Rack travel in m: 8.70...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 67.5...70.5

1000 s: (65.0...73.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.60

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AF
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 206.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

009

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8.40...8.50
 Del.quantity cm3/ : 7.0...7.2
 100 s : (6.8...7.4)
 Spread cm3 : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm3/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm3 : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 70.0...72.0
 1000 : (68.0...74.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 7.40
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1230...1260
 4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control lever
position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm: 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.40...8.50
2nd speed rpm : 650
Rack travel in m: 9.00...9.10
3rd speed rpm : 850
Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 65.5...68.5
1000 s: (63.0...71.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AG
 Injection pump
 Pump designation : PE12A95D61DLS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...115QAB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.10...8.20

Del. quantity cm³/ : 6.7...6.9

100 s: (6.5...7.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 67.0...69.0

1000 : (65.0...71.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 7.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control lever
position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.10...8.20
2nd speed rpm : 650
Rack travel in m: 8.70...8.80
3rd speed rpm : 850
Rack travel in m: 8.20...8.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 61.5...64.5
1000 s: (59.0...67.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 106AH
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1150AB1083L
 Governor no. : 0 420 212 114

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 190.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 7.90...8.00
 Del. quantity cm³/ : 6.4...6.6
 100 s : (6.2...6.8)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 64.0...66.0
 1000 : (62.0...68.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 6.90
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1220...1250
 4th rack travel in: 1400

Speed rpm : 0.00...1.00

Remarks:

LOW IDLE 1

Control lever
position degrees: 12...20

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 640...700

CONSTANT REGULATION

Speed rpm : 320...400

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 7.90...8.00
2nd speed rpm : 650
Rack travel in m: 8.50...8.60
3rd speed rpm : 850
Rack travel in m: 8.00...8.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 57.5...60.5
1000 s: (55.0...63.0)

RACK STOP ADJUSTMENT

Speed rpm : 400

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 6.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...14.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AA
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 268.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 9.2...9.4

100 s : (9.0...9.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 92.0...94.0

1000 : (90.0...96.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 9.20
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.20...10.30
2nd speed rpm : 650
Rack travel in m: 10.70...10.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 90.5...93.5
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.20
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AB
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RGV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 261.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 8.9...9.1

100 s : (8.7...9.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200

travel mm : 0.70...0.80

2nd speed rpm : 500

travel mm : 2.60...2.80

3rd speed rpm : 900

travel mm : 5.60...5.80

4th speed rpm : 1300

travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 9.00
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.60
3rd speed rpm : 850
Rack travel in m: 10.20...10.40

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 87.5...91.5
1000 s: (85.0...94.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AC
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 246.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del. quantity cm³/ : 8.4...8.6

100 s : (8.2...8.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.50
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AD
 Injection pump
 Pump designation : PE12A95D61OLS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 245.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 8.4...8.6

100 s : (8.2...8.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.50
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

START CUT-CUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AE
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RGV300...125DAB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 240.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.20...9.30

Del.quantity cm³/ : 8.1...8.3

100 s : (7.9...8.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.20
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.20...9.30
2nd speed rpm : 650
Rack travel in m: 9.70...9.80
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 74.5...77.5
1000 s: (72.0...80.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.20
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AF
 Injection pump
 Pump designation : PE12A950610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 235.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 7.9...8.1

100 s : (7.7...8.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 79.0...81.0

1000 : (77.0...83.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.00
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1340...1370
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.50...9.60
3rd speed rpm : 850
Rack travel in m: 9.20...9.40

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AG
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 210.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 8.30...8.40

Del.quantity cm³/ : 7.0...7.2

100 s : (6.8...7.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80

2nd speed rpm : 500
 travel mm : 2.60...2.80

3rd speed rpm : 900
 travel mm : 5.60...5.80

4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 70.0...72.0

1000 : (68.0...74.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 7.30
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1330...1360
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.30...8.40
2nd speed rpm : 650
Rack travel in m: 8.80...8.90
3rd speed rpm : 850
Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 61.5...64.5
1000 s: (59.0...67.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 640 113AH
 Injection pump
 Pump designation : PE12A95D610LS2453
 EP type number : 0 410 690 998
 Governor
 Governor design. : RQV300...1250AB1223L
 Governor no. : 0 420 212 092

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kW : 254.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

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Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.60...9.70
 Del.quantity cm3/ : 8.7...8.9
 100 s : (8.5...9.1)
 Spread cm3 : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm3/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm3 : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200
 travel mm : 0.70...0.80
 2nd speed rpm : 500
 travel mm : 2.60...2.80
 3rd speed rpm : 900
 travel mm : 5.60...5.80
 4th speed rpm : 1300
 travel mm : 8.60...8.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 87.0...89.0
 1000 : (85.0...91.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.60
 Speed rpm : 1290...1300
 2nd rack travel in: 4.50
 Speed rpm : 1340...1370
 4th rack travel in: 1500
 Speed rpm : 0.00...1.00

LOW IDLE 1

Control Lever
 position degrees: 80...88

Testing:

Speed rpm : 100
 Minimum rack travel: 8.00
 Speed rpm : 300
 Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
 Torque control curve - 1st version
 1st speed rpm : 1250
 Rack travel in m: 9.60...9.70
 2nd speed rpm : 650
 Rack travel in m: 10.10...10.20
 3rd speed rpm : 850
 Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
 Del.quantity cm³/ : 84.5...87.5
 1000 s: (82.0...90.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
 Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

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Del.quantity cm³/ : 120.0...130.0
 1000 s: (117.0...133.0)
 Rack travel in mm : 13.50...14.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 640 114AA

Injection pump
 Pump designation : PE12A95D610LS2590
 EP type number : 0 410 690 995
 Governor
 Governor design. : RGV300...1150AB1086-
 1L
 Governor no. : 0 420 212 221

Customer-spec. information
 Customer : KHD

Engine : F12L413F

1st version kw : 224.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-
 11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.50...9.60

Del. quantity cm³/ : 7.8...8.0
 100 s: (7.6...8.2)

Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 600.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)

Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 600
 travel mm : 1.40...1.50

2nd speed rpm : 615
 travel mm : 1.70...1.90

3rd speed rpm : 665
 travel mm : 2.80...3.00

4th speed rpm : 1180
 travel mm : 8.50...8.60

5th speed rpm : 1225
 travel mm : 9.30...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1165
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150

Del. quantity : 78.0...80.0
1000 : (76.0...82.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.50
Speed rpm : 1170...1180
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 83...91

Testing:

Speed rpm : 300
Minimum rack travel: 10.50
Speed rpm : 600
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 600...670

TORQUE CONTROL

Dimension a mm : 0.90
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.50...9.60
2nd speed rpm : 800
Rack travel in m: 10.40...10.50
3rd speed rpm : 990
Rack travel in m: 10.00...10.20
4th speed rpm : 1060
Rack travel in m: 9.50...9.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

D04

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Compressor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 646 264AA
 Injection pump
 Pump designation : PE6A95D410LS2450
 EP type number : 0 410 696 989
 Governor
 Governor design. : RQ750AB1041L
 Governor no. : 0 420 200 062

Customer-spec. information
 Customer : KHD

Engine : F6L413F

1st version kw : 89.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

D05

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s: (10.0...10.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 0.9...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 10.50

Speed rpm : 750...755

2nd rack travel in: 4.50

Speed rpm : 780...788

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 646 264AB
Injection pump
Pump designation : PE6A95D410LS2450
EP type number : 0 410 696 989
Governor
Governor design. : RQ750AB1041L
Governor no. : 0 420 200 062

Customer-spec. information
Customer : KHD

Engine : F6L413F

1st version kW : 87.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 9.00...12.00

D07

Firing order : 1- 6- 5- 4- 3- 2

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 10.0...10.2

100 s : (9.8...10.4)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 0.9...1.4

100 s : (0.6...1.6)

Spread cm3 : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.80

Speed rpm : 750...755

2nd rack travel in: 4.50

Speed rpm : 780...788

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.80...14.20

Remarks:
:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 111AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governor no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 174.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

D09

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del. quantity cm³/ : 8.9...9.1

100 s : (8.7...9.3)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.00

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1330...1360

4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL
Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 845
Rack travel in m: 10.20...10.40
4th speed rpm : 970
Rack travel in m: 10.00...10.30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 88.5...91.5
1000 s: (86.0...94.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

D10

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 9.0...15.0
1000 s: (6.5...17.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 111AB
 Injection pump
 Pump designation : PE8A95D41QLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governor no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 154.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 8.90...9.00
 Del.quantity cm³/ : 7.8...8.0
 100 s : (7.6...8.2)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 550
 Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 78.0...80.0
 1000 : (76.0...82.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 16.0

Testing:
 1st rack travel in: 7.90
 Speed rpm : 1295...1310
 2nd rack travel in: 4.00
 Speed rpm : 1325...1355

4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.90...9.00
2nd speed rpm : 650
Rack travel in m: 9.40...9.50
3rd speed rpm : 845
Rack travel in m: 9.00...9.20
4th speed rpm : 970
Rack travel in m: 8.80...9.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 70.5...73.5
1000 s: (68.0...76.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.90
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

D12

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 9.0...15.0
1000 s: (6.5...17.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 111AC
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governor no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 103.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 10.00...10.10
 Del. quantity cm³/ : 8.4...8.6
 100 s: (8.2...8.8)
 Spread cm³ : 0.3
 100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 550
 Rack travel in mm : 15.60...16 40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del. quantity : 84.0...86.0
 1000 : (82.0...88.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 16.0

Testing:
 1st rack travel in: 9.00
 Speed rpm : 1295...1310
 2nd rack travel in: 4.00
 Speed rpm : 1335...1365
 4th rack travel in: 1450
 Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
 Speed rpm : 300
 Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.00...10.10

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 31.07.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 648 122AA
Injection pump
Pump designation : PE8A95D410LS2451
EP type number : 0 410 698 992
Governor
Governor design. : RQ300/1150AB1074L
Governor no. : 0 420 200 066

Customer-spec. information
Customer : KHD

Engine : F8L413F
1st version kW : 164.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 419 992 198
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175
Test lines : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 9.00...12.00

D15

Firing order : 1- 8- 7- 2- 6- 5-
4- 3

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
Rack travel in mm : 9.60...9.70
Del.quantity cm3/ : 8.7...8.9
100 s: (8.5...9.1)
Spread cm3 : 0.3
100 s: (0.6)

2nd speed rpm : 300.0
Rack travel in mm : 6.4...6.6
Del.quantity cm3/ : 1.1...1.7
100 s: (0.8...1.9)
Spread cm3 : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Del.quantity : 87.0...89.0
1000 : (85.0...91.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 16.0

Testing:
1st rack travel in: 8.60
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1220...1250

4th rack travel in: 1325
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 350...390
Speed rpm : 450
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 1000
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 86.5...89.5
1000 s: (84.0...92.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 122AB
 Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RQ300/1150AB1074L
 Governor no. : 0 420 200 066

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 159.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.40...9.50
 Del.quantity cm³/ : 8.4...8.6
 100 s : (8.2...8.8)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 84.0...86.0
 1000 : (82.0...88.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 600
 Rack travel in mm : 16.0

Testing:
 1st rack travel in: 8.40
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1215...1245

4th rack travel in: 1325
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.5

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 350...390
Speed rpm : 450
Maximum rack trave: 1.00

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.40...9.50
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 1000
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 82.5...85.5
1000 s: (80.0...88.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 128AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1100AB1126L
 Governor no. : 0 420 212 140

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 151.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.00...10.10

Del. quantity cm³/ : 7.9...8.1

100 s: (7.7...8.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.70...0.80

2nd speed rpm : 450
 travel mm : 1.90...2.20

3rd speed rpm : 950
 travel mm : 6.40...6.60

4th speed rpm : 1215
 travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 79.0...81.0

1000 : (77.0...83.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 8.30
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 415...535

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.30...9.41
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 78.5...81.5
1000 s: (76.0...84.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30

D20

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.50...14.90

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 128AB
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1100AB1126L
 Governor no. : 0 420 212 140

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 121.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 7.90...8.01

Del. quantity cm³/ : 6.2...6.4

100 s: (6.0...6.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.70...0.80

2nd speed rpm : 450

travel mm : 1.90...2.20

3rd speed rpm : 950

travel mm : 6.40...6.60

4th speed rpm : 1215

travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 62.0...64.0

1000 : (60.0...66.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 6.90
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 415...535

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 7.90...8.01
2nd speed rpm : 650
Rack travel in m: 8.60...8.70
3rd speed rpm : 850
Rack travel in m: 8.00...8.20

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 58.5...61.5
1000 s: (56.0...64.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 6.90

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.50...14.90

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 141AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV300...1250AB1195L
 Governor no. : 0 420 212 172

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 169.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.80...9.90

Del.quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30

2nd speed rpm : 500
 travel mm : 2.80...3.00

3rd speed rpm : 1000
 travel mm : 6.50...6.70

4th speed rpm : 1290
 travel mm : 8.60...8.80

5th speed rpm : 1375
 travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 8.80
Speed rpm : 1290...1300
2nd rack travel in: 4.50
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.30...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.80...9.90
2nd speed rpm : 650
Rack travel in m: 10.30...10.40
3rd speed rpm : 850
Rack travel in m: 10.00...10.20
4th speed rpm : 950
Rack travel in m: 9.80...10.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del. quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 648 142AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV350...1250AB990-1
 L
 Governor no. : 0 420 212 182

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 165.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1225
 Rack travel in mm : 9.50...9.61
 Del. quantity cm³/ : 8.5...8.7
 100 s: (8.3...8.9)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 350.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.20...1.30
 2nd speed rpm : 600
 travel mm : 3.80...4.00
 3rd speed rpm : 900
 travel mm : 5.20...5.50
 4th speed rpm : 1315
 travel mm : 9.30...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1225
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1225
 Del. quantity : 85.0...87.0
 1000 : (83.0...89.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.50
Speed rpm : 1260...1270
2nd rack travel in: 4.00
Speed rpm : 1295...1325
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 65...73

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 370...480

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1225
Rack travel in m: 9.50...9.61
2nd speed rpm : 700
Rack travel in m: 10.00...10.10
3rd speed rpm : 250
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 81.5...84.5
1000 s: (79.0...87.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 206.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.60...9.70

Del. quantity cm³/ : 8.7...8.9
 100 s : (8.5...9.1)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)

Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50
 2nd speed rpm : 325
 travel mm : 1.50...2.00
 3rd speed rpm : 760
 travel mm : 4.80...5.30
 4th speed rpm : 1200
 travel mm : 8.60...9.10
 5th speed rpm : 1420
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1150
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 87.0...89.0
 1000 : (85.0...91.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.60
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 1000
Rack travel in m: 9.70...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

D28

1st version
1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD

Engine : F10L413F

1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.30...9.40

Del.quantity cm³/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50

2nd speed rpm : 325
 travel mm : 1.50...2.00

3rd speed rpm : 760
 travel mm : 4.80...5.30

4th speed rpm : 1200
 travel mm : 8.60...9.10

5th speed rpm : 1420
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:
Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION
Speed rpm : 320...390

TORQUE CONTROL
Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1160
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 1000
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del. quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E02

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AC
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kw : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

E03

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.50

2nd speed rpm : 325

travel mm : 1.50...2.00

3rd speed rpm : 760

travel mm : 4.80...5.30

4th speed rpm : 1200

travel mm : 8.60...9.10

5th speed rpm : 1420

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 8.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:
Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION
Speed rpm : 320...390

TORQUE CONTROL
Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 1000
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E04

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AD
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 180.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

E05

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.70...8.80

Del.quantity cm³/ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50

2nd speed rpm : 325
 travel mm : 1.50...2.00

3rd speed rpm : 760
 travel mm : 4.80...5.30

4th speed rpm : 1200
 travel mm : 8.60...9.10

5th speed rpm : 1420
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 74.0...76.0

1000 : (72.0...78.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 7.70
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.70...8.80
2nd speed rpm : 650
Rack travel in m: 9.30...9.40
3rd speed rpm : 1000
Rack travel in m: 8.80...9.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E06

1st version
1mm rack travel less than

full load rack tr: 7.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 188AE
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : 0 420 214 229

Customer-spec. information

Customer : KHD
 Engine : F10L413F

1st version kW : 171.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

E07

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.30...8.41

Del.quantity cm³/ : 7.0...7.2

100 s : (6.8...7.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50

2nd speed rpm : 325
 travel mm : 1.50...2.00

3rd speed rpm : 760
 travel mm : 4.80...5.30

4th speed rpm : 1200
 travel mm : 8.60...9.10

5th speed rpm : 1420
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 70.0...72.0

1000 : (68.0...74.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 7.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.30...8.40
2nd speed rpm : 650
Rack travel in m: 8.90...9.00
3rd speed rpm : 1000
Rack travel in m: 8.40...8.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 63.5...66.5
1000 s: (61.0...69.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E08

1st version
1mm rack travel less than

full load rack tr: 7.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : O 400 649 188AF
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : O 410 699 998
 Governor
 Governor design. : RQV300...1150AB988DL
 Governor no. : O 420 214 229

Customer-spec. information
 Customer : KHD

Engine : F10L413FW

1st version kW : 192.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : O 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

EO9

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 8.1...8.3

100 s : (7.9...8.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.50

2nd speed rpm : 325
 travel mm : 1.50...2.00

3rd speed rpm : 760
 travel mm : 4.80...5.30

4th speed rpm : 1200
 travel mm : 8.60...9.10

5th speed rpm : 1420
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 200
Minimum rack travel: 10.70
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack travel: 1.00

CONSTANT REGULATION

Speed rpm : 320...390

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 1000
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 81.5...84.5
1000 s: (79.0...87.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

E10

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del. quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 649 189AA
Injection pump
Pump designation : PE10A95D610/4LS2452
EP type number : 0 410 699 998
Governor
Governor design. : RQV300...1075AB988DL
Governor no. : 0 420 214 230

Customer-spec. information
Customer : KHD

Engine : F10L413F

1st version kW : 188.0
Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.30...9.40

Del.quantity cm3/ : 8.2...8.4

100 s: (8.0...8.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 82.0...84.0

1000 : (80.0...86.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.30

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1150...1180

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 900
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 81.5...84.5
1000 s: (79.0...87.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 189AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1075AB988DL
 Governor no. : 0 420 214 230

Customer-spec. information

Customer : KHD
 Engine : F10L413F

1st version kW : 178.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.00

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1145...1175

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 900
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 75.5...78.5
1000 s: (73.0...81.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

min rack travel less than

full load rack tr: 8.00
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 189AC
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RGV300...1075AB988DL
 Governor no. : 0 420 214 230

Customer spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 175.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 8.80...8.90

Del. quantity cm³/ : 7.4...7.6

100 s : (7.2...7.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del. quantity : 74.0...76.0

1000 : (72.0...78.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 7.80

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1145...1175

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.50
3rd speed rpm : 900
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 189AD
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RGV300...1075AB988DL
 Governor no. : 0 420 214 230

Customer-spec. information

Customer : KHD
 Engine : F10L413FW

1st version kW : 168.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.6...7.8

100 s: (7.4...8.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 76.0...78.0

1000 : (74.0...80.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 8.00

Speed rpm : 1115...1125

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 440...500
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...450

TORQUE CONTROL

Dimension a mm : 0.70
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.70...9.80
3rd speed rpm : 900
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 77.5...80.5
1000 s: (75.0...83.0)
Speed rpm : 400
Del.quantity cm³/ : 78.5...82.5
1000 s: (76.0...85.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RGV300...1000AB1006D
 L
 Governor no. : 0 420 214 232
 Customer-spec. information
 Customer : KHD
 Engine : F10L413F
 1st version kw : 175.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test Lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 7.8...8.0
 100 s : (7.6...8.2)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1075
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 78.0...80.0
 1000 : (76.0...82.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 60...68

Testing:
 1st rack travel in: 8.30
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1070...1100
 4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 700
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 80.5...83.5
1000 s: (78.0...86.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

E20

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 L
 Governor no. : 0 420 214 232

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 167.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 9.00...9.10
 Del. quantity cm³/ : 7.4...7.6
 100 s : (7.2...7.8)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1075
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 74.0...76.0
 1000 : (72.0...78.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 60...68

Testing:
 1st rack travel in: 8.00
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1065...1095
 4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 700
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

E22

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AC
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 L
 Governor no. : 0 420 214 232

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 163.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 8.80...8.90

Del. quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1075

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 60...68

Testing:

1st rack travel in: 7.80

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1065...1095

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 700
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version:
1st speed rpm : 1000
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.50
3rd speed rpm : 850
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 71.5...74.5
1000 s: (69.0...77.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

E24

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 195AD
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1000AB1006D
 L
 Governor no. : 0 420 214 232

Customer-spec. information

Customer : KHD
 Engine : F10L413F

1st version kW : 148.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 8.20...8.30
 Del. quantity cm³/ : 6.4...6.6
 100 s : (6.2...6.8)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1075
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 64.0...66.0
 1000 : (62.0...68.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 60...68

Testing:
 1st rack travel in: 7.20
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1060...1090
 4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Speed rpm : 700

Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 350...500

TORQUE CONTROL

Dimension a mm : 0.60

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 8.20...8.30

2nd speed rpm : 650

Rack travel in m: 8.80...8.90

3rd speed rpm : 850

Rack travel in m: 8.30...8.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 61.5...64.5

1000 s: (59.0...67.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.20

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

LOW IDLE

E26

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Del.quantity cm³/ : 11.0...17.0

1000 s: (8.5...19.5)

Spread cm³ : 3.50

1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 217.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.80...9.90

Del.quantity cm³/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 8.80

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack trave: 8.00

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.30

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 9.80...9.90

2nd speed rpm : 650

Rack travel in m: 10.30...10.40

3rd speed rpm : 850

Rack travel in m: 10.00...10.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm3/ : 87.5...90.5

1000 s: (85.0...93.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300

Rack travel in mm : 6.40...6.60

Del.quantity cm3/ : 11.0...17.0

1000 s: (8.5...19.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 147.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

F01

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 10.2...10.4

100 s : (10.0...10.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.8...7.0

Del.quantity cm³/ : 1.4...2.0

100 s : (1.1...2.2)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 102.0...104.0

1000 : (100.0...106.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.60

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1340...1370

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 200AC
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQ300/1250AB984DL
 Governor no. : 0 420 202 274

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 140.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

F03

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.50...10.60

Del.quantity cm³/ : 9.6...9.8

100 s : (9.4...10.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.8...7.0

Del.quantity cm³/ : 1.4...2.0

100 s : (1.1...2.2)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.50

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.30

Torque control curve - 1st version

1st speed rpm : 750

Rack travel in m: 10.50...10.60

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.50

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300

Rack travel in mm : 6.80...7.00

Del.quantity cm3/ : 14.0...20.0

1000 s: (11.5...22.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 649 200AD
Injection pump
Pump designation : PE10A95D610/4LS2452
EP type number : 0 410 699 998
Governor
Governor design. : RQ300/1250AB984DL
Governor no. : 0 420 202 274

Customer-spec. information
Customer : KHD

Engine : F10L413F

1st version kW : 130.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 9.00...12.00

F05

Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.00

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.00...10.10

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.30...15.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 202AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300/650...900AB10
 20L
 Governor no. : 0 420 212 099

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kw : 160.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 9.20...9.31
 Del.quantity cm³/ : 7.6...7.8
 100 s : (7.4...8.0)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 910
 Rack travel in mm : 15.00...18.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Del.quantity : 76.0...78.0
 1000 : (74.0...80.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 62...70

Testing:
 1st rack travel in: 8.20
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 950...980
 4th rack travel in: 1050

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 340...400

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.20...9.30
2nd speed rpm : 650
Rack travel in m: 9.20...9.30

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : O 400 649 202AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : O 410 699 998
 Governor
 Governor design. : RQV300/650...900AB10
 20L
 Governor no. : O 420 212 099

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 153.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : O 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

F09

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.00...9.10

Del.quantity cm³/ : 7.1...7.3

100 s: (6.9...7.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 910

Rack travel in mm : 15.00...18.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 71.0...73.0

1000 : (69.0...75.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 8.00

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 950...980

4th rack travel in: 1050

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Speed rpm : 750
Maximum rack trave: 1.00

CONSTANT REGULATION

Speed rpm : 340...400

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.00...9.10

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 11.0...17.0
1000 s: (8.5...19.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 210AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1150AB1055D
 L
 Governor no. : 0 420 214 244

Customer-spec. information
 Customer : KHD

Engine : F10L413F
 1st version kW : 196.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 8.2...8.4
 100 s: (8.0...8.6)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
 travel mm : 1.50...1.80
 2nd speed rpm : 700
 travel mm : 3.65...3.95
 3rd speed rpm : 1100
 travel mm : 7.20...7.40
 4th speed rpm : 1250
 travel mm : 9.10...9.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1200
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:
1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 7...15

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 320...425

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 850
Rack travel in m: 10.30...10.40
3rd speed rpm : 1000
Rack travel in m: 9.90...10.10

START CUT-OUT
Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 850
Del.quantity cm3/ : 92.5...95.5
1000 s: (90.0...98.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks: :

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AA
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242
 Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kW : 154.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 6.9...7.1
 100 s : (6.7...7.3)
 Spread cm³ : 0.3
 100 s : (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.4...7.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 69.0...71.0
 1000 : (67.0...73.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 8.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 67...75

Testing:
Speed rpm : 200
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION
Speed rpm : 300...420

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 800
Rack travel in m: 10.30...10.40
3rd speed rpm : 935
Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 800
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)
Speed rpm : 100
Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

When accelerating from engine speed
"0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AB
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW
 1st version kW : 148.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.10...9.20
 Del. quantity cm³/ : 6.7...6.9
 100 s : (6.5...7.1)
 Spread cm³ : 0.3
 100 s : (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.4...7.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 67.0...69.0
 1000 : (65.0...71.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 8.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version:
1st speed rpm : 1150
Rack travel in m: 9.10...9.20
2nd speed rpm : 800
Rack travel in m: 10.10...10.20
3rd speed rpm : 935
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 72.5...75.5
1000 s: (70.0...78.0)
Speed rpm : 100
Del. quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

When accelerating from engine speed
"0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AC
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW

1st version kW : 138.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.80...8.90

Del. quantity cm³/ : 6.3...6.5

100 s: (6.1...6.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.4...7.6

Del. quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60

2nd speed rpm : 390
 travel mm : 2.20...2.60

3rd speed rpm : 1195
 travel mm : 8.70...9.10

4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 63.0...65.0

1000 : (61.0...67.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 7.80
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 0.80
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.80...8.90
2nd speed rpm : 800
Rack travel in m: 9.60...9.70
3rd speed rpm : 935
Rack travel in m: 9.10...9.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm³/ : 68.5...71.5
1000 s: (66.0...74.0)
Speed rpm : 100
Del.quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

When accelerating from engine speed
"0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AD
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW

1st version kW : 106.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8.00...8.10
 Del. quantity cm³/ : 5.3...5.5
 100 s: (5.1...5.7)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 7.4...7.6
 Del. quantity cm³/ : 1.1...1.7
 100 s: (0.8...1.9)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 53.0...55.0
 1000 : (51.0...57.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 7.00

Speed rpm : 1150...1200

2nd rack travel in: 4.00

Speed rpm : 1220...1250

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 67...75

Testing:

Speed rpm : 200

Minimum rack travel: 9.00

Speed rpm : 300

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 8.00...8.10

2nd speed rpm : 800

Rack travel in m: 9.00...9.10

3rd speed rpm : 935

Rack travel in m: 8.50...8.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del. quantity cm³/ : 58.5...61.5

1000 s: (56.0...64.0)

Speed rpm : 100

Del. quantity cm³/ : 64.5...69.5

1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 219AE
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242
 Customer-spec. information
 Customer : KHD
 Engine : F10L413 FW
 1st version kw : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 9.50...9.60
 Del.quantity cm³/ : 7.1...7.3
 100 s : (6.9...7.5)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 7.4...7.6
 Del.quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 71.0...73.0
 1000 : (69.0...75.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 8.50

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1190...1220

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 67...75

Testing:

Speed rpm : 200

Minimum rack travel: 9.00

Speed rpm : 300

Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 0.80

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 9.50...9.60

2nd speed rpm : 800

Rack travel in m: 10.30...10.40

3rd speed rpm : 935

Rack travel in m: 9.80...10.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del. quantity cm³/ : 73.5...76.5

1000 s: (71.0...79.0)

Speed rpm : 100

Del. quantity cm³/ : 64.5...69.5

1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

2. Set fuel delivery in fuel-delivery characteristics with stop above the governor housing.

When accelerating from engine speed "0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 649 219AF

Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1047D
 L
 Governor no. : 0 420 214 242

Customer-spec. information
 Customer : KHD

Engine : F10L413 FW

1st version kW : 127.0
 Rated speed : -

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.40...8.50

Del. quantity cm³/ : 5.7...5.9
 100 s : (5.5...6.1)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 7.4...7.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.60
 2nd speed rpm : 390
 travel mm : 2.20...2.60
 3rd speed rpm : 1195
 travel mm : 8.70...9.10
 4th speed rpm : 1245
 travel mm : 9.40...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1170
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 57.0...59.0
 1000 : (55.0...61.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 117...125

Testing:

1st rack travel in: 7.40
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 67...75

Testing:

Speed rpm : 200
Minimum rack travel: 8.40
Speed rpm : 300
Rack travel in mm : 7.40...7.60

CONSTANT REGULATION

Speed rpm : 300...420

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.40...8.50
2nd speed rpm : 800
Rack travel in m: 9.40...9.50
3rd speed rpm : 935
Rack travel in m: 8.70...8.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 62.5...65.5
1000 s: (60.0...68.0)
Speed rpm : 100
Del. quantity cm³/ : 64.5...69.5
1000 s: (62.0...72.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.40...15.80

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

2. Set fuel delivery in fuel-delivery
characteristics with stop above the
governor housing.

When accelerating from engine speed
"0", no voltage in starting solenoid.

APPLICATION

Below-ground operation

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 235.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

F25

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 96.5...98.5

1000 : (94.5...100.5)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 9.40
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.40...10.50
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 1000
Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 95.0...98.0
1000 s: (92.5...100.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1290...1300

F26

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AB
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...125DAB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 224.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.00...10.10

Del. quantity cm³/ : 9.2...9.4

100 s : (9.0...9.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30

2nd speed rpm : 500
 travel mm : 2.80...3.00

3rd speed rpm : 1000
 travel mm : 6.50...6.70

4th speed rpm : 1290
 travel mm : 8.60...8.80

5th speed rpm : 1375
 travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 92.0...94.0

1000 : (90.0...96.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 9.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.60
3rd speed rpm : 1000
Rack travel in m: 10.10...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del. quantity cm³/ : 90.5...93.5
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AC
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F
 1st version kW : 217.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

G01

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.80...9.90
 Del.quantity cm³/ : 8.9...9.1
 100 s : (8.7...9.3)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30
 2nd speed rpm : 500
 travel mm : 2.80...3.00
 3rd speed rpm : 1000
 travel mm : 6.50...6.70
 4th speed rpm : 1290
 travel mm : 8.60...8.80
 5th speed rpm : 1375
 travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1275
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 89.0...91.0
 1000 : (87.0...93.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 8.80
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.80...9.90
2nd speed rpm : 650
Rack travel in m: 10.30...10.40
3rd speed rpm : 1000
Rack travel in m: 9.90...10.10

START CUT-OFF

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 87.5...90.5
1000 s: (85.0...93.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.80
Speed rpm : 1290...1300

G02

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AD
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 211.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00

G03

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.50...9.60

Del.quantity cm³/ : 8.6...8.8

100 s: (8.4...9.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.30

2nd speed rpm : 500
 travel mm : 2.80...3.00

3rd speed rpm : 1000
 travel mm : 6.50...6.70

4th speed rpm : 1290
 travel mm : 8.60...8.80

5th speed rpm : 1375
 travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 8.50
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 80...88

Testing:
Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 375...485

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 1000
Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm³/ : 83.5...86.5
1000 s: (81.0...89.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AE
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 206.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

G05

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 8.4...8.6

100 s : (8.2...8.8)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 84.0...86.0

1000 : (82.0...88.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 8.30
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 1000
Rack travel in m: 9.40...9.60

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1290...1300

G06

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 223AF
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1129L
 Governor no. : 0 420 212 143

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 200.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

G07

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.10...9.20

Del. quantity cm³/ : 8.1...8.3

100 s : (7.9...8.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del. quantity cm³/ : 1.1...1.7

100 s : (0.8...1.9)

Spread cm³ : 0.3

100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 500

travel mm : 2.80...3.00

3rd speed rpm : 1000

travel mm : 6.50...6.70

4th speed rpm : 1290

travel mm : 8.60...8.80

5th speed rpm : 1375

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1275

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:

1st rack travel in: 8.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 80...88

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.10...9.20
2nd speed rpm : 650
Rack travel in m: 9.60...9.70
3rd speed rpm : 1000
Rack travel in m: 9.20...9.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 76.5...79.5
1000 s: (74.0...82.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1290...1300

G08

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 241AA
 Injection pump
 Pump designation : PE10A95D610/4LS2589
 EP type number : 0 410 699 994
 Governor
 Governor design. : RQV300...1150AB1086L
 Governor no. : 0 420 212 113

Customer-spec. information
 Customer : KHD

Engine : F10L413

1st version kW : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 8.30...8.40

Del.quantity cm³/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.1...1.7

100 s: (0.8...1.9)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.30...0.50

2nd speed rpm : 600
 travel mm : 2.80...3.10

3rd speed rpm : 1000
 travel mm : 6.40...6.70

4th speed rpm : 1200
 travel mm : 8.80...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 54...62

Testing:

1st rack travel in: 7.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 16...24

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 420...540

TORQUE CONTROL

Dimension a mm : 0.90
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.30...8.40
2nd speed rpm : 800
Rack travel in m: 9.20...9.30
3rd speed rpm : 1000
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del. quantity cm³/ : 83.5...86.5
1000 s: (81.0...89.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 7.30

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Compressor

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 649 245AA
 Injection pump
 Pump designation : PE10A95D610/4LS2452
 EP type number : 0 410 699 998
 Governor
 Governor design. : RQV300...1250AB1055-
 2L
 Governor no. : 0 420 212 216

Customer-spec. information
 Customer : KHD

Engine : F10L413F

1st version kW : 200.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 10- 9- 4- 3- 6-
 5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
 216-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.10...9.20

Del. quantity cm³/ : 8.1...8.3
 100 s : (7.9...8.5)

Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.4...6.6
 Del. quantity cm³/ : 1.1...1.7
 100 s : (0.8...1.9)
 Spread cm³ : 0.3
 100 s : (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.40...1.50
 2nd speed rpm : 410
 travel mm : 2.50...2.70
 3rd speed rpm : 460
 travel mm : 3.00...3.20
 4th speed rpm : 1305
 travel mm : 8.60...8.80
 5th speed rpm : 1375
 travel mm : 9.60...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1255
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del. quantity : 81.0...83.0
 1000 : (79.0...85.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 8.10
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1475
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 408...458

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.10...9.20
2nd speed rpm : 750
Rack travel in m: 10.10...10.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del. quantity cm³/ : 87.5...90.5
1000 s: (85.0...93.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.10
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

G12

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.50...14.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 038AA
 Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RSV300...1000A7c1002
 L
 Governor no. : 0 420 232 309

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 129.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 7.5...7.7

100 s: (7.3...7.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.1...1.8

100 s: (0.8...2.0)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del. quantity : 75.0...77.0

1000 : (73.0...79.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.30

Speed rpm : 940...950

2nd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1150
Speed rpm : 0.30...1.70

LOW IDLE 1

Control Lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.30...9.40
2nd speed rpm : 700
Rack travel in m: 9.70...9.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 75.5...78.5
1000 s: (73.0...81.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.20...14.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 038AB
 Injection pump
 Pump designation : PE8A95D410LS2451
 EP type number : 0 410 698 992
 Governor
 Governor design. : RSV300...1000A7C1002
 L
 Governor no. : 0 420 232 309

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 123.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 6.9...7.1

100 s: (6.7...7.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.1...1.8

100 s: (0.8...2.0)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del. quantity : 69.0...71.0

1000 : (67.0...73.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.00

Speed rpm : 940...950

2nd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1150
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 9.00...9.10
2nd speed rpm : 700
Rack travel in m: 9.40...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.20...14.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AA
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 188.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 10.40...10.50
 Del.quantity cm³/ : 9.6...9.8
 100 s: (9.4...10.0)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 96.5...98.5
 1000 : (94.5...100.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 9.40
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1330...1360
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.40...10.50
2nd speed rpm : 650
Rack travel in m: 10.90...11.00
3rd speed rpm : 850
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 95.0...98.0
1000 s: (92.5...100.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AB
 Injection pump
 Pump designation : FE8A95D41DLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 174.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 10.00...10.10
 Del. quantity cm³/ : 8.9...9.1
 100 s : (8.7...9.3)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del. quantity : 89.0...91.0
 1000 : (87.0...93.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 9.00
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.60
3rd speed rpm : 850
Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 89.5...92.5
1000 s: (87.0...95.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

G20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AC
 Injection pump
 Pump designation : PE8A95D41QLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kw : 169.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

G21

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.70...9.80

Del. quantity cm³/ : 8.6...8.8

100 s: (8.4...9.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.70

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.70...9.80
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 81.5...84.5
1000 s: (79.0...87.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

G22

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AD
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 165.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.50...9.60
 Del. quantity cm³/ : 8.5...8.7
 100 s : (8.3...8.9)
 Spread cm³ : 0.3
 100 s : (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del. quantity : 85.0...87.0
 1000 : (83.0...89.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.50
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.50...9.60
2nd speed rpm : 650
Rack travel in m: 10.00...10.10
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AE
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kW : 162.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 8.2...8.4
 100 s : (8.0...8.6)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del. quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.30
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack travel: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.80...9.90
3rd speed rpm : 850
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 76.5...79.5
1000 s: (74.0...82.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AF
 Injection pump
 Pump designation : FE8A95D41OLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information

Customer : KHD
 Engine : F8L413F

1st version kW : 156.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.00...9.10
 Del.quantity cm³/ : 7.9...8.1
 100 s : (7.7...8.3)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 79.0...81.0
 1000 : (77.0...83.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.00
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.50...9.61
3rd speed rpm : 850
Rack travel in m: 9.20...9.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AG
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 154.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 8.90...9.00
 Del.quantity cm³/ : 7.8...8.0
 100 s : (7.6...8.2)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 78.0...80.0
 1000 : (76.0...82.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.90
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.90...9.00
2nd speed rpm : 650
Rack travel in m: 9.40...9.51
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.90
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H02

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AH
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 152.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
 BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

H03

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 8.80...8.90
 Del.quantity cm3/ : 7.7...7.9
 100 s: (7.5...8.1)
 Spread cm3 : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm3/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm3 : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 77.0...79.0
 1000 : (75.0...81.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.80
 Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.30...9.41
3rd speed rpm : 850
Rack travel in m: 9.00...9.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H04

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 678 040A1

Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 130.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

H05

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 7.70...7.80

Del. quantity cm³/ : 6.4...6.6

100 s: (6.2...6.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del. quantity : 64.0...66.0

1000 : (62.0...68.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 6.70

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1250
Rack travel in m: 7.70...7.80
2nd speed rpm : 650
Rack travel in m: 8.30...8.40
3rd speed rpm : 850
Rack travel in m: 7.80...8.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 54.5...57.5
1000 s: (52.0...60.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 6.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

HD6

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AK
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 165.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

H07

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.60...9.70
 Del.quantity cm3/ : 8.7...8.9
 100 s: (8.5...9.1)
 Spread cm3 : 0.3
 100 s: (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm3/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm3 : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 87.0...89.0
 1000 : (85.0...91.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.60
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 85.5...88.5
1000 s: (83.0...91.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AL
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 157.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 8.3...8.5
 100 s: (8.1...8.7)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 83.0...85.0
 1000 : (81.0...87.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.30
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AM
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 150.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____
 BEGINNING OF DELIVERY
 Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 9.00...9.10
 Del.quantity cm3/ : 7.8...8.0
 100 s : (7.6...8.2)
 Spread cm3 : 0.3
 100 s : (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm3/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm3 : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 78.0...80.0
 1000 : (76.0...82.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.00
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.71
3rd speed rpm : 850
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 75.5...78.5
1000 s: (73.0...81.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H12

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AN
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F
 1st version kw : 147.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8.80...8.90
 Del.quantity cm³/ : 7.6...7.8
 100 s: (7.4...8.0)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 76.0...78.0
 1000 : (74.0...80.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.80
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1150
Rack travel in m: 8.80...8.90
2nd speed rpm : 650
Rack travel in m: 9.40...9.51
3rd speed rpm : 850
Rack travel in m: 8.90...9.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 71.5...74.5
1000 s: (69.0...77.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H14

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040A0
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 140.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 8.50...8.60
 Del.quantity cm³/ : 7.2...7.4
 100 s : (7.0...7.6)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 72.0...74.0
 1000 : (70.0...76.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.50
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 8.50...8.60
2nd speed rpm : 650
Rack travel in m: 9.10...9.21
3rd speed rpm : 850
Rack travel in m: 8.60...8.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 67.5...70.5
1000 s: (65.0...73.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H16

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AP
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 104.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 6.80...6.90
 Del.quantity cm³/ : 5.1...5.3
 100 s : (4.9...5.5)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 51.0...53.0
 1000 : (49.0...55.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 5.80
 Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 6.80...6.90
2nd speed rpm : 650
Rack travel in m: 7.60...7.71
3rd speed rpm : 850
Rack travel in m: 6.90...7.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 48.5...51.5
1000 s: (46.0...54.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 5.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H18

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AQ
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kw : 152.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 9.30...9.40
 Del. quantity cm³/ : 8.2...8.4
 100 s : (8.0...8.6)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del. quantity : 82.0...84.0
 1000 : (80.0...86.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.30
 Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 8.30
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H2O

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AR
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 157.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 9.60...9.70
 Del.quantity cm³/ : 8.7...8.9
 100 s: (8.5...9.1)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Del.quantity : 87.0...89.0
 1000 : (85.0...91.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 8.60
 Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 86.5...89.5
1000 s: (84.0...92.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 8.60
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H22

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AS
 Injection pump
 Pump designation : PE8A95D41OLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kw : 149.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 9.20...9.30

Del.quantity cm3/ : 8.1...8.3

100 s: (7.9...8.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del.quantity : 81.0...83.0

1000 : (79.0...85.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.20

Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 9.20...9.30
2nd speed rpm : 650
Rack travel in m: 9.80...9.91
3rd speed rpm : 850
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 79.5...82.5
1000 s: (77.0...85.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H24

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AT
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 142.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 8.90...9.00
 Del.quantity cm³/ : 7.5...7.8
 100 s: (7.3...8.0)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s: (0.6...1.7)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Del.quantity : 75.5...78.5
 1000 : (73.5...80.5)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.90
 Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1075
Rack travel in m: 8.90...9.00
2nd speed rpm : 650
Rack travel in m: 9.50...9.61
3rd speed rpm : 850
Rack travel in m: 9.00...9.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.90
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AU
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 137.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 8.70...8.80

Del. quantity cm³/ : 7.2...7.4

100 s : (7.0...7.6)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del. quantity : 72.0...74.0

1000 : (70.0...76.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 7.70

Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1075
Rack travel in m: 8.70...8.80
2nd speed rpm : 650
Rack travel in m: 9.30...9.41
3rd speed rpm : 850
Rack travel in m: 8.80...9.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 70.5...73.5
1000 s: (68.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.70
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

H28

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AV
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310
 Customer-spec. information
 Customer : KHD
 Engine : F8L413F
 1st version kW : 127.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 8.30...8.40
 Del.quantity cm³/ : 6.6...6.8
 100 s : (6.4...7.0)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm³/ : 0.9...1.5
 100 s : (0.6...1.7)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.00

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Del.quantity : 66.0...68.0
 1000 : (64.0...70.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: ?

Testing:
 1st rack travel in: 7.30
 Speed rpm : 1115...1125

2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack travel: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 8.30...8.40
2nd speed rpm : 650
Rack travel in m: 8.90...9.01
3rd speed rpm : 850
Rack travel in m: 8.40...8.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 63.5...66.5
1000 s: (61.0...69.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.30
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J02

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AW
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 147.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.60...9.70

Del. quantity cm³/ : 8.3...8.5

100 s : (8.1...8.7)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 83.0...85.0

1000 : (81.0...87.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.60

Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.20...10.30
3rd speed rpm : 850
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 83.5...86.5
1000 s: (81.0...89.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AX
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information

Customer : KHD
 Engine : F8L413F

1st version kW : 140.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

J05

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 7.8...8.0

100 s: (7.6...8.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 78.0...80.0

1000 : (76.0...82.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.30

Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack travel: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.90...10.00
3rd speed rpm : 850
Rack travel in m: 9.60...9.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del. quantity cm³/ : 80.5...83.5
1000 s: (78.0...86.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J06

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 678 040AY
 Injection pump
 Pump designation : PE8A95D41DLS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RSV300...1325A8C1002
 L
 Governor no. : 0 420 232 310

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kw : 134.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 7.4...7.6

100 s: (7.2...7.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 74.0...76.0

1000 : (72.0...78.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 8.00

Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1575
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370
Speed rpm : 700
Maximum rack trave: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.60...9.71
3rd speed rpm : 850
Rack travel in m: 9.30...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 74.5...77.5
1000 s: (72.0...80.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 116.5...127.5
1000 s: (113.5...130.5)
Rack travel in mm : 14.00...14.40

Remarks:

J08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : O 400 845 050AA
 Injection pump
 Pump designation : PES5A95D410RS2417
 EP type number : O 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governor no. : O 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kw : 70.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : O 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

J09

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.10...10.20

Del. quantity cm³/ : 9.6...9.8

100 s : (9.4...10.0)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 0.8...1.4

100 s : (0.5...1.6)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.10

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION

Generator set



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 845 050AB
 Injection pump
 Pump designation : PES5A95D4:10RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR

1st version kW : 68.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.80...9.90

Del. quantity cm³/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.80

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION:

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 845 050AC
 Injection pump
 Pump designation : PES5A95D410RS2417
 EP type number : 0 410 895 993
 Governor
 Governor design. : RQ750AB1240L
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F5L413FR
 1st version kW : 64.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.40...9.50

Del.quantity cm³/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 0.8...1.4

100 s: (0.5...1.6)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:
 1st rack travel in: 8.40

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.00...14.40

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 845 051AA

Injection pump
Pump designation : PES5A95D410RS2417
EP type number : 0 410 895 993
Governor
Governor design. : RQ900AB1054L
Governor no. : 0 420 200 064

Customer-spec. information
Customer : KHD

Engine : F5L413FR

1st version kW : 78.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.40...9.50

Del.quantity cm³/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.40

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 432AA
 Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB124OL
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 92.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 10.1...10.3

100 s : (9.9...10.5)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 1.0...1.6

100 s : (0.7...1.8)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.40

Speed rpm : 750...755

2nd rack travel in: 3.70

Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 12.90...13.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 432AB
 Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB1240L
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 89.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 10.40...10.50
 Del. quantity cm³/ : 10.1...10.3
 100 s : (9.9...10.5)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 250.0
 Rack travel in mm : 5.3...5.5
 Del. quantity cm³/ : 1.0...1.6
 100 s : (0.7...1.8)
 Spread cm³ : 0.3
 100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 101.0...103.0
 1000 : (99.0...105.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Testing:
 1st rack travel in: 9.40
 Speed rpm : 750...755
 2nd rack travel in: 3.70
 Speed rpm : 775...785

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version
 1mm rack travel less than
 full load rack tr: 9.40
 Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 12.90...13.20

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 432AC
 Injection pump
 Pump designation : PES6A95D41URS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ750AB124OL
 Governor no. : 0 420 200 110

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 82.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x-600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 9.80...9.90

Del. quantity cm³/ : 9.1...9.3

100 s: (8.9...9.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del. quantity : 91.0...93.0

1000 : (89.0...95.0)

Spread cm³ : 3.50

1000 : (6.00)

START CUT-OUT

Speed 1/min : 640 (660)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.80

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 12.90...13.20

Remarks:

APPLICATION

Generator set



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 433AA
 Injection pump
 Pump designation : PES6A95D41ORS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governor no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 107.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.20...10.30

Del. quantity cm³/ : 10.0...10.2

100 s : (9.8...10.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del. quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del. quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 433AB
 Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governor no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 103.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

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Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 10.0...10.2

100 s : (9.8...10.4)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.20

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
Edition : 21.08.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 846 433AC
Injection pump
Pump designation : PES6A95D410RS2416
EP type number : 0 410 896 961
Governor
Governor design. : RQ900AB1054L
Governor no. : 0 420 200 064

Customer-spec. information
Customer : KHD

Engine : F6L413FR

1st version kW : 95.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.40...9.50

Del. quantity cm3/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del. quantity cm3/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm3 : 0.3

100 s: (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del. quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.40

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 433AD
 Injection pump
 Pump designation : PES6A95D410RS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RQ900AB1054L
 Governor no. : 0 420 200 064

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 92.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00x2.00x600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Rack travel in mm : 9.00...12.00

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Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 9.10...9.20

Del.quantity cm³/ : 8.5...8.7

100 s : (8.3...8.9)

Spread cm³ : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm³/ : 0.9...1.5

100 s : (0.6...1.7)

Spread cm³ : 0.3

100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 8.10

Speed rpm : 900...905

2nd rack travel in: 3.50

Speed rpm : 930...940

START CUT-OUT

Speed 1/min : 810 (830)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.10

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 13.20...13.80

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 562A
 Injection pump
 Pump designation : PES6A100D41ORS2687
 EP type number : 0 410 806 001
 Governor
 Governor design. : RQV400...1000AB1231L
 Governor no. : 0 420 212 206

Customer-spec. information
 Customer : LIEBHERR

Engine : D906TI

1st version kW : 169.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 419 992 198
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 13.70...13.80
 Del. quantity cm³/ : 13.9...14.1
 100 s: (13.7...14.3)
 Spread cm³ : 0.3
 100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 6.8...7.0
 Del. quantity cm³/ : 1.0...1.6
 100 s: (0.7...1.8)
 Spread cm³ : 0.3
 100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 440
 travel mm : 2.10...2.30
 2nd speed rpm : 500
 travel mm : 3.00...3.50
 3rd speed rpm : 585
 travel mm : 3.50...4.00
 4th speed rpm : 1045
 travel mm : 8.10...8.20
 5th speed rpm : 1135
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1065
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000

Aneroid pressure h: 700
Del. quantity : 139.0...141.0
1000 : (137.0...143.0)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:

1st rack travel in: 12.70
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 400
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION

Speed rpm : 425...500

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 500
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.60...12.80
2nd pressure hPa : 435
Rack travel in m: 13.30...13.40
3rd pressure hPa : 410
Rack travel in m: 12.80...13.00

K04

START CUT-OUT

Speed 1/min : 320 (340)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 700
Del. quantity cm³/ : 134.0...136.0
1000 s: (131.5...138.5)
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 104.5...106.5
1000 s: (102.5...108.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.70
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.80...7.00
Del. quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 198AG
 Injection pump
 Pump designation : PES6A95D41ORS2416
 EP type number : 0 410 896 961
 Governor
 Governor design. : RSV300...1150A8C616D
 L
 Governor no. : 0 420 232 323

Customer-spec. information
 Customer : KHD

Engine : F6L413FR

1st version kW : 113.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 10.30...10.40

Del.quantity cm3/ : 10.3...10.5

100 s: (10.1...10.7)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 103.0...105.0

1000 : (101.0...107.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: ?

Testing:

1st rack travel in: 9.30

Speed rpm : 1075...1085

2nd rack travel in: 4.00

Speed rpm : 1100...1130

3rd rack travel in: 4.00

Speed rpm : 1135...1165
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 535...595

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1030
Rack travel in m: 10.30...10.40
2nd speed rpm : 500
Rack travel in m: 10.40...10.50
4th speed rpm : 750
Rack travel in m: 10.20...10.30

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1075...1085

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.80...16.20

Remarks:

:

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 a
 Edition : 21.08.92
 Replaces : 02.89
 Test oil : ISO-4113
 Combination no. : 0 400 876 322
 Injection pump
 Pump designation : PES6A95D410RS2689
 EP type number : 0 410 896 916
 Governor
 Governor design. : RSV400...1000A1C2187
 L
 Governor no. : 0 420 232 387

Customer-spec. information
 Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45

Overflow valve : 1 419 992 198

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)

K07

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.3...6.5

Del. quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 87.0...89.0

1000 : (85.0...91.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 95...103

Testing:

1st rack travel in: 9.40
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1050...1080
 3rd rack travel in: 4.00
 Speed rpm : 1090...1120
 4th rack travel in: 1230
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
 position degrees: 68...76
 Setting point w/out bumper spring
 Speed rpm : 400
 Rack travel in mm : 5.9

Testing:

Speed rpm : 100
 Minimum rack trave: 19.50
 Speed rpm : 400
 Rack travel in mm : 6.30...6.50
 Rack travel in mm : 2.00
 Speed rpm : 530...590

TORQUE CONTROL

Torque control curve - 1st version
 1st speed rpm : 1000
 Rack travel in m: 10.40...10.50
 2nd speed rpm : 500
 Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
 Del.quantity cm3/ : 77.5...80.5
 1000 s: (75.0...83.0)

BREAKAWAY

1st version

1mm rack travel less than
 full load rack tr: 9.40
 Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
 Del.quantity cm3/ : 120.0...130.0
 1000 s: (117.0...133.0)
 Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400

K08

Rack travel in mm : 6.30...6.50
 Del.quantity cm3/ : 10.0...16.0
 1000 s: (7.5...18.5)
 Spread cm3 : 3.50
 1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 a 5
 Edition : 03.09.92
 Replaces : 07.02.89
 Test oil : ISO-4113
 Combination no. : 0 400 876 322E
 Injection pump
 Pump designation : PES6A95D410RS2689
 EP type number : 0 410 896 916
 Governor
 Governor design. : RSV400...1000A1C2187
 Governor no. : 0 420 232 387

Customer-spec. information
 Customer : LIEBHERR

Engine : D906 TB

1st version kW : 120.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 11.30...11.50
 Del. quantity cm³/ : 10.2...10.4
 100 s : (10.0...10.6)
 Spread cm³ : 0.3
 100 s : (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 6.3...6.5
 Del. quantity cm³/ : 1.0...1.6
 100 s : (0.7...1.8)
 Spread cm³ : 0.3
 100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 2.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 980
 Del. quantity : 102.0...104.0
 1000 : (100.0...106.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 89...97

Testing:
1st rack travel in: 10.30
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1030...1060
3rd rack travel in: 4.00
Speed rpm : 1055...1085
4th rack travel in: 1220
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 400
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 510...570

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 11.30...11.40
2nd speed rpm : 500
Rack travel in m: 11.30...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm³/ : 105.5...108.5
1000 s: (103.0...111.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400

K10

Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE
 Edition : 24.07.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 398
 Injection pump
 Pump designation : PES6A100D410RS2754
 EP type number : 0 410 806 002
 Governor
 Governor design. : RSV425...1100AOC2235
 -2L
 Governor no. : 0 420 232 576

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076TRW06

1st version kw : 98.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 27...29

K11

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.00...9.10

Del. quantity cm³/ : 8.3...8.5

100 s : (8.1...8.7)

Spread cm³ : 0.4

100 s : (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.5...5.7

Del. quantity cm³/ : 2.6...3.0

100 s : (2.3...3.2)

Spread cm³ : 0.6

100 s : (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del. quantity : 83.5...85.5

1000 : (81.5...87.5)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 8.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1200...1210
3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.50...5.70

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.80...10.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 103.0...107.0
1000 s: (101.0...109.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 26.0...30.0
1000 s: (23.5...32.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE51909
Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 0,5 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : STE 10,0 g1
 Edition : 31.07.92
 Replaces : 01.91
 Test oil : ISO-4113
 Combination no. : 0 401 846 941
 Injection pump
 Pump designation : PE6P110A720RS3243
 EP type number : 0 411 816 770
 Governor
 Governor design. : RQ300/1100PA412-5
 Governor no. : 0 421 801 562

Customer-spec. information
 Customer : SNF

Engine : WD615.63

1st version kW : 204.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 16.4...16.6

100 s: (16.1...16.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 3.9...4.1

Del. quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 14.60...15.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1200

Del. quantity : 164.0...166.0

1000 : (161.0...169.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 15.0

Testing:

1st rack travel in: 11.70

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 4.0

Testing:

Speed rpm : 100

Minimum rack travel: 5.50

Speed rpm : 300

Rack travel in mm : 3.90...4.10

Rack travel in mm : 2.00

Speed rpm : 350...390

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 1200

Rack travel mm : 12.70...12.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.90...10.10

2nd pressure hPa : 500

Rack travel in m: 11.90...12.00

3rd pressure hPa : 325

Rack travel in m: 10.30...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 700

Del.quantity cm³/ : 172.0...176.0

1000 s: (169.0...179.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 120.0...122.0

1000 s: (117.0...125.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 232.0...272.0

1000 s: (228.0...276.0)

Rack travel in mm : 17.50...18.50

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 708A
 Injection pump
 Pump designation : PE8P110A320LS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQ300/1150PA187-3
 Governor no. : 0 421 801 133

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 195.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.80...11.90
 Del. quantity cm³/ : 10.4...10.6
 100 s: (10.1...10.8)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 8.2...8.4
 Del. quantity cm³/ : 1.5...2.1
 100 s: (1.2...2.3)
 Spread cm³ : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 650
 Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Del. quantity : 104.0...106.0
 1000 : (101.5...108.5)
 Spread cm³ : 4.00
 1000 : (7.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 650
 Rack travel in mm : 13.5

Testing:
 1st rack travel in: 10.80

Speed rpm : 1090...1105
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.3

Testing:

Speed rpm : 100
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.20...8.40
Rack travel in mm : 2.00
Speed rpm : 420...460
Speed rpm : 550
Maximum rack travel: 1.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del. quantity cm³/ : 118.0...122.0
1000 s: (115.0...125.0)
Spread cm³ : 5.00
1000 s: (8.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 a 5
 Edition : 27.09.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 756A
 Injection pump
 Pump designation : PE8P110A320LS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RQV300...1150PA486-3
 Governor no. : 0 421 813 411

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM422

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8-7-2-6-3-5-4-1

Phasing : 0-45-90-135-180-225-270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.20...11.40
 Del. quantity cm³/ : 9.9...10.1
 100 s: (9.6...10.3)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 8.4...8.6
 Del. quantity cm³/ : 1.4...2.0
 100 s: (1.1...2.2)
 Spread cm³ : 0.4
 100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 300
 travel mm : 1.50...2.00
 2nd speed rpm : 900
 travel mm : 6.40...6.90
 3rd speed rpm : 1206
 travel mm : 8.30...8.80
 4th speed rpm : 1302
 travel mm : 9.80...10.30

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1230
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Del. quantity : 99.0...101.0
 1000 : (96.5...103.5)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 10.00

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 18...26

Testing:

Speed rpm : 100

Minimum rack travel: 9.70

Speed rpm : 300

Rack travel in mm : 8.00...8.20

Rack travel in mm : 2.00

Speed rpm : 410...480

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 11.00...11.10

2nd speed rpm : 600

Rack travel in m: 11.20...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1150

Del. quantity cm³/ : 112.0...116.0

1000 s: (109.0...119.0)

Spread cm³ : 7.00

1000 s: (10.0)

Speed rpm : 600

Del. quantity cm³/ : 92.0...96.0

1000 s: (89.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 b1
Edition : 21.08.92
Replaces : 02.91
Test oil : ISO-4113
Combination no. : 0 401 876 343
Injection pump
Pump designation : PE6P120A32ORS500
EP type number : 0 411 826 140
Governor
Governor design. : RSV250...750P7A507-3
Governor no. : 0 421 833 358

Customer-spec. information
Customer : DAF

Engine : DKZ 1160

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Test nozzle holder assembly : 1 688 901 019
Opening pressure, bar : 207...210
Orifice plate diameter mm : 0,8
Test lines : 1 680 750 067
Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4
Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 13.80...13.90
Del.quantity cm3/ : 24.2...24.4
100 s: (23.9...24.7)
Spread cm3 : 0.5
100 s: (0.9)
2nd speed rpm : 250.0
Rack travel in mm : 6.7...6.9
Del.quantity cm3/ : 1.4...2.0
100 s: (1.1...2.3)
Spread cm3 : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 242.0...244.0
1000 : (239.0...247.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 90...98

Testing:
1st rack travel in: 12.80
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 780...795
4th rack travel in: 950
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 66...74

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.8

Speed rpm : 250

Rack travel in mm : 6.70...6.90

Rack travel in mm : 2.00

Speed rpm : 260...300

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.80

Speed rpm : 750...755

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.70...6.90

Del.quantity cm3/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.05.92
 Replaces : 04.92
 Test oil : ISO-4113
 Combination no. : 0 401 876 791
 Injection pump
 Pump designation : PE6P110A320LS3859
 EP type number : 0 411 816 784
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9306 TI

1st version kw : 230.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)

Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 14.10...14.20

Del.quantity cm³/ : 18.3...18.5

100 s: (18.0...18.7)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 1.9...2.4

100 s: (1.6...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1200

Del.quantity : 183.0...185.0

1000 : (180.5...187.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 96...102

Testing:

1st rack travel in: 13.10

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1080...1110
3rd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1260
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.9
Speed rpm : 400
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 520...580

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 14.10...14.20
2nd speed rpm : 500
Rack travel in m: 14.10...14.30
3rd speed rpm : 350
Rack travel in m: 15.30...15.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 550
Pressure hPa : 1200
Rack travel mm : 14.10...14.20

Measurement

Speed 1/min : 550
1st pressure hPa : -
Rack travel in m: 13.00...13.20
2nd pressure hPa : 525
Rack travel in m: 13.80...13.90
3rd pressure hPa : 475
Rack travel in m: 13.50...13.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 160.0...162.0
1000 s: (157.5...164.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 13.10
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 19.0...24.0
1000 s: (16.5...26.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 26.06.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 878 717
 Injection pump
 Pump designation : PE8P110A320LS3853
 EP type number : 0 411 818 720
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 14.60...14.70
 Del. quantity cm³/ : 19.6...19.8
 100 s : (19.3...20.1)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 1.2...1.8
 100 s : (0.9...2.1)
 Spread cm³ : 0.6
 100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1500
 Del. quantity : 196.0...198.0
 1000 : (193.0...201.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:
 1st rack travel in: 13.60
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 980...1020
 3rd rack travel in: 4.00
 Speed rpm : 1020...1040
 4th rack travel in: 1100

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 72...78

Setting point w/out bumper spring

Speed rpm : 400

Rack travel in mm : 5.7

Speed rpm : 400

Rack travel in mm : 5.60...5.80

Rack travel in mm : 2.00

Speed rpm : 430...490

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 900

Rack travel in m: 14.60...14.70

2nd speed rpm : 500

Rack travel in m: 14.60...14.80

3rd speed rpm : 350

Rack travel in m: 15.80...16.40

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1500

Rack travel mm : 14.60...14.70

Measurement:

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 13.60...13.80

2nd pressure hPa : 760

Rack travel in m: 14.20...14.40

3rd pressure hPa : 690

Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 550

Del.quantity cm³/ : 171.0...173.0

1000 s: (168.0...176.0)

Spread cm³ : 8.00

1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.60

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 150.0...170.0

1000 s: (146.0...174.0)

Rack travel in mm : 20.00...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 878 717
 Injection pump
 Pump designation : PE8P110A320LS3853-1
 EP type number : 0 411 818 726
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 833 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

K25

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
 Rack travel in mm : 14.60...14.70
 Del. quantity cm³/ : 19.6...19.8
 100 s: (19.3...20.1)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 400.0
 Rack travel in mm : 5.8...6.0
 Del. quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.6
 100 s: (1.0)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Aneroid pressure h: 1500
 Del. quantity : 196.0...198.0
 1000 : (193.0...201.0)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:
 1st rack travel in: 13.60
 Speed rpm : 940...950
 2nd rack travel in: 4.00
 Speed rpm : 985...1015

3rd rack travel in: 4.00
Speed rpm : 1010...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 72...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 490...550

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 14.60...14.70
2nd speed rpm : 500
Rack travel in m: 14.60...14.80
3rd speed rpm : 350
Rack travel in m: 15.80...16.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1500
Rack travel mm : 14.60...14.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 13.60...13.80
2nd pressure hPa : 760
Rack travel in m: 14.20...14.40
3rd pressure hPa : 690
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 171.0...173.0
1000 s: (168.0...176.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

K26

1mm rack travel less than
full load rack tr: 13.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...174.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 6.00
1000 s: (10.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
 Edition : 26.06.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 878 717A
 Injection pump
 Pump designation : PE8P110A320LS3853
 EP type number : 0 411 818 720
 Governor
 Governor design. : RSV400...1000P1A554
 Governor no. : 0 421 333 376

Customer-spec. information
 Customer : LIEBHERR

Engine : D 9308 TI

1st version kW : 288.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)

Rack travel in mm : 9.00...12.00

K27

Firing order : 1- 8- 7- 2- 6- 3-
 5- 4

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 14.60...14.70

Del.quantity cm³/ : 19.6...19.8

100 s : (19.3...20.1)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 1.2...1.8

100 s : (0.9...2.1)

Spread cm³ : 0.6

100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 1500

Del.quantity : 196.0...198.0

1000 : (193.0...201.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 95...103

Testing:

1st rack travel in: 13.60

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 980...1020

3rd rack travel in: 4.00
Speed rpm : 1020...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 72...78
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7
Speed rpm : 400
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 14.60...14.70
2nd speed rpm : 500
Rack travel in m: 14.60...14.80
3rd speed rpm : 350
Rack travel in m: 15.80...16.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1500
Rack travel mm : 14.60...14.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 13.60...13.80
2nd pressure hPa : 760
Rack travel in m: 14.20...14.40
3rd pressure hPa : 690
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 171.0...173.0
1000 s: (168.0...176.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

K28

1mm rack travel less than

full load rack tr: 13.60
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)
Rack travel in mm : 20.00...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE
Edition : 26.06.92
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 878 717B
Injection pump
Pump designation : PE8P110A320LS3853
EP type number : 0 411 818 720
Governor
Governor design. : RSV400...1000P1A554
Governor no. : 0 421 833 376

Customer-spec. information
Customer : LIEBHERR

Engine : D 9308 T

1st version kW : 255.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter
x Wall thickness
x Length mm : 8.00x2.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
: (3.75...3.95)
Rack travel in mm : 9.00...12.00

LD1

Firing order : 1- 8- 7- 2- 6- 3-
5- 4

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 900
Rack travel in mm : 13.40...13.50
Del. quantity cm3/ : 16.6...16.8
100 s : (16.3...17.1)
Spread cm3 : 0.4
100 s : (0.7)

2nd speed rpm : 400.0
Rack travel in mm : 5.9...6.1
Del. quantity cm3/ : 1.2...1.8
100 s : (0.9...2.1)
Spread cm3 : 0.6
100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h: 1500
Del. quantity : 166.0...168.0
1000 : (163.0...171.0)
Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 96...102

Testing:
1st rack travel in: 12.40
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 980...1020

3rd rack travel in: 4.00
Speed rpm : 1020...1040
4th rack travel in: 1100
Speed rpm : 0.30...1.40

LOW IDLE: 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7
Speed rpm : 400
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 13.40...13.50
2nd speed rpm : 500
Rack travel in m: 13.40...13.60
3rd speed rpm : 350
Rack travel in m: 14.60...15.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 550
Pressure hPa : 1500
Rack travel mm : 13.40...13.50

Measurement

Speed 1/min : 550

1st pressure hPa : -
Rack travel in m: 12.50...12.60
2nd pressure hPa : 620
Rack travel in m: 12.90...13.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 550
Del.quantity cm³/ : 152.0...154.0
1000 s: (149.0...157.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)
Rack travel in mm : 20.00...21.00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 10,0 d1
 Edition : 31.07.92
 Replaces : 12.90
 Test oil : ISO-4113
 Combination no. : 0 402 035 029
 Injection pump
 Pump designation : PES5P120A720/3LS528
 EP type number : 0 412 025 022
 Governor
 Governor design. : RQ325/1000PA813-20
 Governor no. : 0 421 801 567

Customer-spec. information

Customer : MAN

Engine : D2865LF/LU3E

1st version kW : 198.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 13.00...14.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 5

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 21.5...21.7

100 s: (21.2...22.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 325.0

Rack travel in mm : 4.3...4.7

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 215.0...217.0

1000 : (212.0...220.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.60

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack travel: 6.00
Speed rpm : 325
Rack travel in mm : 4.40...4.60
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.10...12.20
2nd speed rpm : 550
Rack travel in m: 12.50...12.90
3rd speed rpm : 825
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 150
Rack travel in m: 9.60...9.70
3rd pressure hPa : 390
Rack travel in m: 10.90...11.20

START CUT-OUT

Speed 1/min : 245 (265)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm³/ : 215.0...221.0
1000 s: (212.0...224.0)
Aneroid pressure h: 1000
Speed rpm : 550
Del.quantity cm³/ : 205.0...211.0
1000 s: (202.0...214.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.30...4.70
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7121
Setting and blocking of pointer of
start-of-delivery sensor on cyl. 5
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a30
 Edition : 21.08.92
 Replaces : 11.88
 Test oil : ISO-4113

Combination no. : 0 402 036 071

Injection pump
 Pump designation : PES6P120A720/3LS470-
 2

EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813-3
 Governor no. : 0 421 801 422

Customer-spec. information
 Customer : MAN

Engine : D2866TOH

1st version kw : 213.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

L05

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 10.70...10.80
 Del.quantity cm³/ : 19.3...19.5
 100 s: (19.0...19.8)

Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.7...4.9
 Del.quantity cm³/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 750
 Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 193.5...195.5
 1000 : (190.5...198.5)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 750
 Rack travel in mm : 15.5

Testing:

1st rack travel in: 9.30
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 9.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.8

Testing:

Speed rpm : 100
Minimum rack travel: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...4.90
Rack travel in mm : 2.00
Speed rpm : 385...425

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.40...10.50
2nd speed rpm : 750
Rack travel in m: 11.20...11.50
3rd speed rpm : 980
Rack travel in m: 11.00...11.20
4th speed rpm : 1030
Rack travel in m: 10.50...10.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.70...10.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 240
Rack travel in m: 9.00...9.20
3rd pressure hPa : 520
Rack travel in m: 10.00...10.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

L06

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm3/ : 196.5...202.5
1000 s: (193.5...205.5)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 186.0...192.0
1000 s: (183.0...195.0)
Aneroid pressure h: 20
Speed rpm : 500
Del.quantity cm3/ : 168.0...180.0
1000 s: (165.0...183.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.70...4.90
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7896

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN
 Edition : 28.06.91
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 077A
 Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA813-6
 Governor no. : 0 421 801 466

Cust. part no. : 3-7167

Customer-spec. information
 Customer : MAN

Engine : D2866TUH/001

1st version kW : 222.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32
 Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750
 Rack travel in mm : 11.20...11.30
 Del. quantity cm³/ : 19.5...19.7
 100 s: (19.2...20.0)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.2...5.4
 Del. quantity cm³/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 750
 Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del. quantity : 195.0...197.0
 1000 : (192.0...200.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 750
 Rack travel in mm : 15.5

Testing:

1st rack travel in: 10.20
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 390...430

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.60...11.70
2nd speed rpm : 1050
Rack travel in m: 11.50...11.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.20...11.30

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 270
Rack travel in m: 9.10...9.20
3rd pressure hPa : 450
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1050

L08

Del.quantity cm3/ : 204.0...208.0
1000 s: (201.0...211.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 u5
 Edition : 21.08.92
 Replaces : 12.90
 Test oil : ISO-4113
 Combination no. : 0 402 036 743
 Injection pump
 Pump designation : PES6P120A720/3LS3255
 EP type number : 0 412 026 739
 Governor
 Governor design. : RQ300/1000PA813-19
 Governor no. : 0 421 801 561

Customer-spec. information
 Customer : MAN

Engine : D2866LFD5
 1st version kW : 272.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8
 Test lines : 1 680 750 075
 Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 30...32

L09

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 14.50...15.50
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 15.10...15.20
 Del. quantity cm³/ : 24.4...24.6
 100 s : (24.1...24.9)
 Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.8...5.2
 Del. quantity cm³/ : 1.7...2.3
 100 s : (1.4...2.6)
 Spread cm³ : 0.8
 100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 550
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200
 Del. quantity : 244.0...246.0
 1000 : (241.0...249.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 14.10

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.0

Testing:

Speed rpm : 200
Minimum rack travel: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 15.10...15.20
2nd speed rpm : 700
Rack travel in m: 15.50...15.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 15.10...15.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.80...12.00
2nd pressure hPa : 110
Rack travel in m: 12.10...12.20
3rd pressure hPa : 470
Rack travel in m: 13.80...14.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1000
Del.quantity cm³/ : 241.0...247.0
1000 s: (238.0...250.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 14.10
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 220.0...240.0
1000 s: (216.0...244.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7037

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 754
 Injection pump
 Pump designation : PES6P120A720/3LS3308
 EP type number : 0 412 026 759
 Governor
 Governor design. : RQ300/1000PA813-19
 Governor no. : 0 421 801 561

Customer-spec. information

Customer : MAN
 Engine : D2866LF05
 1st version kW : 272.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Orifice plate diameter mm : 0,8
 Test lines : 1 680 750 075
 Outside diameter x Wall thickness x Length mm : 8.00x2.50x1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 14.50...15.50
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 15.10...15.20
 Del.quantity cm³/ : 24.4...24.6
 100 s: (24.1...24.9)
 Spread cm³ : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.8...5.2
 Del.quantity cm³/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 550
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200
 Del.quantity : 244.0...246.0
 1000 : (241.0...249.0)
 Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Setting point:
 Speed rpm : 550
 Rack travel in mm : 20.0

Testing:
 1st rack travel in: 14.10

Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.0

Testing:

Speed rpm : 200
Minimum rack travel: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 15.10...15.20
2nd speed rpm : 700
Rack travel in m: 15.50...15.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 15.10...15.20

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 11.80...12.00
2nd pressure hPa : 110
Rack travel in m: 12.10...12.20
3rd pressure hPa : 470
Rack travel in m: 13.80...14.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1000
Del.quantity cm³/ : 241.0...247.0
1000 s: (238.0...250.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 14.10
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 220.0...240.0
1000 s: (216.0...244.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.20
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 3-7228

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 6
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 k
 Edition : 21.08.92
 Replaces : 05.92
 Test oil : ISO-4113

Combination no. : 0 402 046 340

Injection pump
 Pump designation : PES6P120A320RS525
 EP type number : 0 412 026 058
 Governor
 Governor design. : RQV300...1050PA955
 Governor no. : 0 421 813 856

Customer-spec. information

Customer : RVI

Engine : M15DS062045J

1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder assembly : 1 638 901 019

Opening pressure, bar : 207...210

Orifice plate diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 9.40...9.50

Del. quantity cm³/ : 13.8...14.0
 100 s : (13.5...14.3)

Spread cm³ : 0.5
 100 s : (0.9)

2nd speed rpm : 275.0
 Rack travel in mm : 5.7...6.1
 Del. quantity cm³/ : 1.7...2.3
 100 s : (1.4...2.6)

Spread cm³ : 0.8
 100 s : (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1050
 travel mm : 8.00...8.20
 2nd speed rpm : 275
 travel mm : 0.80...1.20
 3rd speed rpm : 430
 travel mm : 3.40...4.00
 4th speed rpm : 1400
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1240
 Rack travel in mm : 8.10...10.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Del. quantity : 138.0...140.0
 1000 : (135.0...143.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 298...306

Testing:

1st rack travel in: 8.40
Speed rpm : 1115...1125
2nd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 244...252
Speed rpm : 275
Rack travel in mm : 5.80...6.00

CONSTANT REGULATION

Speed rpm : 310...430

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del. quantity cm³/ : 126.0...134.0
1000 s: (123.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 8.40
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.70...6.10
Del. quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)

L14

Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Setting and blocking of pointer of
start-of-delivery sensor on cyl. 1
start of delivery

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AA
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 168.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 14.00...14.10

Del. quantity cm³/ : 15.9...16.1

100 s: (15.6...16.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del. quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del. quantity : 159.0...161.0

1000 : (156.5...163.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.00

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AB
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 161.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

L17

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 14.00...14.10

Del.quantity cm³/ : 15.9...16.1

100 s: (15.6...16.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 159.0...161.0

1000 : (156.5...163.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.00

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.00

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AC
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 146.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.50...13.60

Del.quantity cm³/ : 14.9...15.1

100 s: (14.6...15.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 149.0...151.0

1000 : (146.5...153.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.50

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AD
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 142.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

L21

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.30...13.40

Del.quantity cm³/ : 14.4...14.6

100 s: (14.1...14.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 144.0...146.0

1000 : (141.5...148.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.30

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : O 402 046 759AE
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : O 412 016 712
 Governor
 Governor design. : R0900PA738
 Governor no. : O 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 154.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : O 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/ : 14.7...14.9

100 s: (14.4...15.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AF
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 147.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/ : 14.7...14.9

100 s : (14.4...15.1)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s : (1.0...2.1)

Spread cm³ : 0.4

100 s : (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 850

Rack travel in m: 13.40...13.50

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AG
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 140.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm³/ : 14.7...14.9

100 s : (14.4...15.1)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s : (1.0...2.1)

Spread cm³ : 0.4

100 s : (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AH
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 130.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

MO1

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 12.9...13.1

100 s: (12.6...13.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm³ : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 129.0...131.0

1000 : (126.5...133.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.70

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 21.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 759AI
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQ900PA738
 Governor no. : 0 421 801 278

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kw : 123.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

M03

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del.quantity cm³/ : 12.3...12.5

100 s : (12.0...12.7)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.3...1.9

100 s : (1.0...2.1)

Spread cm³ : 0.4

100 s : (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 123.0...125.0

1000 : (120.5...127.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.50

Speed rpm : 900...905

2nd rack travel in: 5.50

Speed rpm : 936...945

4th rack travel in: 1050

Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 750 (0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50

Speed rpm : 900...905

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AA
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 167.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M05

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.00...13.10
 Del. quantity cm³/ : 14.2...14.4
 100 s : (13.9...14.6)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40
 2nd speed rpm : 390
 travel mm : 2.40...2.70
 3rd speed rpm : 460
 travel mm : 2.80...3.20
 4th speed rpm : 1190
 travel mm : 8.40...8.50
 5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 1000
 Del. quantity : 142.0...144.0
 1000 : (139.5...146.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.00
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1280...1310
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.00...13.10
2nd speed rpm : 600
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1000
Rack travel mm : 13.00...13.10

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 430
Rack travel in m: 12.90...13.00
3rd pressure hPa : 400
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

MO6

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 450
Del. quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AB
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : (0.50 (0.75))
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.70...12.80
 Del. quantity cm³/ : 13.6...13.8
 100 s : (13.3...14.0)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40
 2nd speed rpm : 390
 travel mm : 2.40...2.70
 3rd speed rpm : 460
 travel mm : 2.80...3.20
 4th speed rpm : 1190
 travel mm : 8.40...8.50
 5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 136.0...138.0
 1000 : (133.5...140.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 11.70
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 83...91

Testing:

Speed rpm : 100
Minimum rack trave: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.70...12.80
2nd speed rpm : 600
Rack travel in m: 12.70...12.90

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

M08

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AC
 Injection pump
 Pump designation : PES6P110A72DRS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 150.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

MD9

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.40...12.50
 Del. quantity cm³/ : 13.0...13.2
 100 s : (12.7...13.4)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40
 2nd speed rpm : 390
 travel mm : 2.40...2.70
 3rd speed rpm : 460
 travel mm : 2.80...3.20
 4th speed rpm : 1190
 travel mm : 8.40...8.50
 5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 130.0...132.0
 1000 : (127.5...134.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.40
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.40...12.50
2nd speed rpm : 600
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

M10

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AD
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 147.0
 Rated speed : -

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M11

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.30...12.40
 Del. quantity cm³/ : 12.7...12.9
 100 s: (12.4...13.1)
 Spread cm³ : 0.4
 100 s: (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s: (1.3...2.4)
 Spread cm³ : 0.4
 100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40
 2nd speed rpm : 390
 travel mm : 2.40...2.70
 3rd speed rpm : 460
 travel mm : 2.80...3.20
 4th speed rpm : 1190
 travel mm : 8.40...8.50
 5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 127.0...129.0
 1000 : (124.5...131.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control Lever
position degrees: 117...125

Testing:
1st rack travel in: 11.30
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1265...1295
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack trave: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.30...12.40
2nd speed rpm : 600
Rack travel in m: 12.30...12.50

START CUT-OUT
Speed 1/min : 250 (270)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 11.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY
Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:
:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AE
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RGV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M13

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del. quantity cm³/ : 12.2...12.4

100 s : (11.9...12.6)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 390
 travel mm : 2.40...2.70

3rd speed rpm : 460
 travel mm : 2.80...3.20

4th speed rpm : 1190
 travel mm : 8.40...8.50

5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 122.0...124.0

1000 : (119.5...126.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 11.10
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 83...91

Testing:

Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 320...480

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.10...12.20
2nd speed rpm : 600
Rack travel in m: 12.10...12.30

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

M14

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AF

Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 138.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M15

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.00...12.10

Del. quantity cm³/ : 12.0...12.2

100 s : (11.7...12.4)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 390
 travel mm : 2.40...2.70

3rd speed rpm : 460
 travel mm : 2.80...3.20

4th speed rpm : 1190
 travel mm : 8.40...8.50

5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del. quantity : 120.0...122.0

1000 : (117.5...124.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.00
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1250...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.00...12.10
2nd speed rpm : 600
Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 250 (270)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

M16

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 783AG
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer spec. information

Customer : KHD
 Engine : BF6L513R

1st version kW : 134.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 11.80...11.90
 Del. quantity cm³/ : 11.6...11.8
 100 s : (11.3...12.0)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40
 2nd speed rpm : 390
 travel mm : 2.40...2.70
 3rd speed rpm : 460
 travel mm : 2.80...3.20
 4th speed rpm : 1190
 travel mm : 8.40...8.50
 5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 116.0...118.0
 1000 : (113.5...120.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 10.80
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1255...1285
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.80...11.90
2nd speed rpm : 600
Rack travel in m: 11.80...12.00

START CUT-OUT
Speed 1/min : 250 (270)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY
Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 402 046 783AH

Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850
 Governor no. : 0 421 813 598

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 170.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

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Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.10...13.20

Del. quantity cm³/ : 14.4...14.6

100 s: (14.1...14.8)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 390
 travel mm : 2.40...2.70

3rd speed rpm : 460
 travel mm : 2.80...3.20

4th speed rpm : 1190
 travel mm : 8.40...8.50

5th speed rpm : 1290
 travel mm : 9.40...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1100

Del. quantity : 144.0...146.0

1000 : (141.5...148.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control Lever
position degrees: 117...125

Testing:
1st rack travel in: 12.10
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1280...1310
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.10...13.20
2nd speed rpm : 600
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1100
Rack travel mm : 13.10...13.20

Measurement
Speed 1/min : 450
1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 430
Rack travel in m: 12.90...13.00
3rd pressure hPa : 370
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

M20

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 450
Del. quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : D 402 046 787AA
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV375...1000PA862
 Governor no. : 0 421 813 625

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 12.9...13.1

100 s : (12.6...13.3)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 375.0

Rack travel in mm : 5.9...6.1

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 375
travel mm : 0.90...1.10

2nd speed rpm : 410
travel mm : 1.60...1.90

3rd speed rpm : 550
travel mm : 2.80...3.10

4th speed rpm : 1050
travel mm : 8.50...8.60

5th speed rpm : 1110
travel mm : 9.50...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del. quantity : 129.0...131.0

1000 : (126.5...133.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 11.70

Speed rpm : 1040...1050

2nd rack travel in: 5.50

Speed rpm : 1075...1105

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: ?

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 375

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 375...480

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 12.70...12.80

2nd speed rpm : 650

Rack travel in m: 12.90...13.00

START CUT-OUT

Speed 1/min : 310 (330)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650

Del.quantity cm³/ : 136.0...140.0

1000 s: (133.0...143.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

M22

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 787AB
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV375...1000PA862
 Governor no. : 0 421 813 625

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 135.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000
 Rack travel in mm : 12.40...12.50
 Del. quantity cm³/ : 12.4...12.6
 100 s : (12.1...12.8)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 375.0
 Rack travel in mm : 5.9...6.1
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 375
 travel mm : 0.90...1.10
 2nd speed rpm : 410
 travel mm : 1.60...1.90
 3rd speed rpm : 550
 travel mm : 2.80...3.10
 4th speed rpm : 1050
 travel mm : 8.50...8.60
 5th speed rpm : 1110
 travel mm : 9.50...9.80

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1050
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 124.0...126.0
 1000 : (121.5...128.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control Lever
position degrees: 117...125

Testing:
1st rack travel in: 11.40
Speed rpm : 1040...1050
2nd rack travel in: 5.50
Speed rpm : 1070...1100
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control Lever
position degrees: ?

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 375
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 375...480

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.40...12.50
2nd speed rpm : 650
Rack travel in m: 12.60...12.70

START CUT-OUT

Speed 1/min : 310 (330)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 650
Del.quantity cm3/ : 131.0...135.0
1000 s: (128.0...138.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

M24

Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 794AA
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA862-1
 Governor no. : 0 421 813 684

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 180.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M25

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 13.70...13.80

Del. quantity cm³/ : 14.7...14.9

100 s : (14.4...15.1)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.50

2nd speed rpm : 450

travel mm : 2.60...3.20

3rd speed rpm : 700

travel mm : 4.80...5.40

4th speed rpm : 1110

travel mm : 7.90...8.10

5th speed rpm : 1230

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del. quantity : 147.0...149.0

1000 : (144.5...151.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 12.70
Speed rpm : 1110...1120
2nd rack travel in: 5.50
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.10
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...480

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 13.70...13.80
2nd speed rpm : 600
Rack travel in m: 13.70...13.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.70
Speed rpm : 1110...1120

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AA
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governor no. : 0 421 813 708

Customer-spec. information
 Customer : KHD

Engine : BF6L413FR/513R

1st version kW : 158.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

M27

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 13.20...13.30
 Del. quantity cm³/ : 13.9...14.1
 100 s : (13.6...14.3)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.1
 100 s : (1.4...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 400
 travel mm : 2.70...3.30
 3rd speed rpm : 600
 travel mm : 4.20...4.80
 4th speed rpm : 1120
 travel mm : 8.40...8.60
 5th speed rpm : 1245
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h: 1010
 Del. quantity : 139.0...141.0
 1000 : (136.5...143.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.20
Speed rpm : 1115...1125
2nd rack travel in: 5.50
Speed rpm : 1210...1240
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 85...93

Testing:
Speed rpm : 100
Minimum rack travel: 2.60
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 13.20...13.30
2nd speed rpm : 600
Rack travel in m: 13.20...13.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1010
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.00...13.10
3rd pressure hPa : 340
Rack travel in m: 12.60...12.70

START CUT-OUT

Speed 1/min : 240 (260)

M28

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 450
Del. quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AB
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governor no. : 0 421 813 708

Customer-spec. information
 Customer : KHD

Engine : BF6L413FR/513R

1st version kW : 150.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5- 3- 6- 2- 4

NO1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 12.90...13.00
 Del. quantity cm³/ : 13.3...13.5
 100 s : (13.0...13.7)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.1
 100 s : (1.4...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 400
 travel mm : 2.70...3.30
 3rd speed rpm : 600
 travel mm : 4.20...4.80
 4th speed rpm : 1120
 travel mm : 8.40...8.60
 5th speed rpm : 1245
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h: 920
 Del. quantity : 133.0...135.0
 1000 : (130.5...137.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 11.90

Speed rpm : 1115...1125

2nd rack travel in: 5.50

Speed rpm : 1205...1235

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 85...93

Testing:

Speed rpm : 100

Minimum rack travel: 9.60

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 12.90...13.00

2nd speed rpm : 600

Rack travel in m: 12.90...13.10

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 920

Rack travel mm : 12.90...13.00

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 370

Rack travel in m: 12.80...12.90

3rd pressure hPa : 320

Rack travel in m: 12.50...12.60

START CUT-OUT

Speed 1/min : 240 (260)

NO2

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 799AC
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-1
 Governor no. : 0 421 813 708

Customer-spec. information

Customer : KHD
 Engine : BF6L413FR/513R
 1st version kW : 142.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N03

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 12.60...12.70
 Del. quantity cm³/ : 12.8...13.0
 100 s : (12.5...13.2)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.1
 100 s : (1.4...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 400
 travel mm : 2.70...3.30
 3rd speed rpm : 600
 travel mm : 4.20...4.80
 4th speed rpm : 1120
 travel mm : 8.40...8.60
 5th speed rpm : 1245
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h: 880
 Del. quantity : 128.0...130.0
 1000 : (125.5...132.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 11.60

Speed rpm : 1115...1125

2nd rack travel in: 5.50

Speed rpm : 1200...1230

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 85...93

Testing:

Speed rpm : 100

Minimum rack travel: 9.60

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 12.60...12.70

2nd speed rpm : 600

Rack travel in m: 12.60...12.80

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 880

Rack travel mm : 12.60...12.70

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 370

Rack travel in m: 12.80...12.90

3rd pressure hPa : 320

Rack travel in m: 12.50...12.60

START CUT-OUT

Speed 1/min : 240 (260)

NO4

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 450

Del.quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60

Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AA
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information

Customer : KHD
 Engine : BF6L513RC

1st version kW : 200.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.90...14.10
 Del. quantity cm³/ : 16.2...16.4
 100 s : (15.9...16.6)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 650
 travel mm : 4.20...4.80
 4th speed rpm : 1195
 travel mm : 8.40...8.60
 5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 1000
 Del. quantity : 162.0...164.0
 1000 : (159.5...166.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.90
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.90...14.00
2nd speed rpm : 700
Rack travel in m: 14.10...14.20
3rd speed rpm : 1000
Rack travel in m: 13.90...14.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1000
Rack travel mm : 13.90...14.10

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 480
Rack travel in m: 13.60...13.70
3rd pressure hPa : 370
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 166.0...170.0
1000 s: (163.0...173.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AB
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 199.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N07

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.90...14.00

Del. quantity cm³/ : 16.1...16.3

100 s : (15.8...16.5)

Spread cm³ : 0.4

100 s : (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del. quantity cm³/ : 1.6...2.2

100 s : (1.3...2.4)

Spread cm³ : 0.4

100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 650
 travel mm : 4.20...4.80

4th speed rpm : 1195
 travel mm : 8.40...8.60

5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del. quantity : 161.0...163.0

1000 : (158.5...165.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.90
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...490

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.90...14.00
2nd speed rpm : 700
Rack travel in m: 14.10...14.20
3rd speed rpm : 1000
Rack travel in m: 13.90...14.10

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1000
Rack travel mm : 13.90...14.00

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 480
Rack travel in m: 13.60...13.70
3rd pressure hPa : 370
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm³/ : 165.0...169.0
1000 s: (162.0...172.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AC
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N09

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.50...13.60
 Del. quantity cm³/ : 15.3...15.5
 100 s : (15.0...15.7)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 650
 travel mm : 4.20...4.80
 4th speed rpm : 1195
 travel mm : 8.40...8.60
 5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 960
 Del. quantity : 153.0...155.0
 1000 : (150.5...157.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.50
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.50...13.60
2nd speed rpm : 700
Rack travel in m: 13.70...13.80
3rd speed rpm : 1000
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 960
Rack travel mm : 13.50...13.60

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 420
Rack travel in m: 13.20...13.30
3rd pressure hPa : 330
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 600
Speed rpm : 700
Del. quantity cm³/ : 158.0...162.0
1000 s: (155.0...165.0)
Aneroid pressure h: -
Speed rpm : 450
Del. quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AD
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 180.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N11

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.20...13.30
 Del. quantity cm³/ : 14.9...15.1
 100 s : (14.6...15.3)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 650
 travel mm : 4.20...4.80
 4th speed rpm : 1195
 travel mm : 8.40...8.60
 5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h: 910
 Del. quantity : 149.0...151.0
 1000 : (146.5...153.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.20
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.20...13.30
2nd speed rpm : 700
Rack travel in m: 13.40...13.50
3rd speed rpm : 1000
Rack travel in m: 13.20...13.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 910
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.10...13.20
3rd pressure hPa : 330
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 540
Speed rpm : 700
Del.quantity cm³/ : 154.0...158.0
1000 s: (151.0...161.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AE
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 170.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.90...13.00
 Del. quantity cm³/ : 14.2...14.4
 100 s : (13.9...14.6)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 650
 travel mm : 4.20...4.80
 4th speed rpm : 1195
 travel mm : 8.40...8.60
 5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 850
 Del. quantity : 142.0...144.0
 1000 : (139.5...146.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 11.90
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1260...1290
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.90...13.00
2nd speed rpm : 700
Rack travel in m: 13.10...13.20
3rd speed rpm : 1000
Rack travel in m: 12.90...13.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 850
Rack travel mm : 12.90...13.00

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 375
Rack travel in m: 12.90...13.00
3rd pressure hPa : 330
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 520
Speed rpm : 700
Del.quantity cm³/ : 147.0...151.0
1000 s: (144.0...154.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 801AF
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-2
 Governor no. : 0 421 813 718

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kW : 165.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.70...12.80
 Del. quantity cm³/ : 13.9...14.1
 100 s : (13.6...14.3)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 650
 travel mm : 4.20...4.80
 4th speed rpm : 1195
 travel mm : 8.40...8.60
 5th speed rpm : 1320
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 835
 Del. quantity : 139.0...141.0
 100G : (136.5...143.5)
 Spread cm³ : 4.00
 100G : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:
1st rack travel in: 11.70
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1255...1285
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 82...90

Testing:
Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...490

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.70...12.80
2nd speed rpm : 700
Rack travel in m: 12.90...13.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 835
Rack travel mm : 12.70...12.80

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 345
Rack travel in m: 12.60...12.70
3rd pressure hPa : 330
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

N16

Aneroid pressure h: 440
Speed rpm : 700
Del.quantity cm3/ : 144.0...148.0
1000 s: (141.0...151.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm3/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 805AA
 Injection pump
 Pump designation : PES6P110A72DRS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-3
 Governor no. : 0 421 813 743

Customer-spec. information
 Customer : KHD

Engine : BF6L413FRC/513RC

1st version kW : 188.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N17

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 13.50...13.60
 Del. quantity cm³/ : 15.3...15.5
 100 s : (15.0...15.7)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40
 2nd speed rpm : 450
 travel mm : 2.60...3.20
 3rd speed rpm : 650
 travel mm : 4.70...5.30
 4th speed rpm : 1110
 travel mm : 8.20...8.40
 5th speed rpm : 1250
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1140
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h : 960
 Del. quantity : 153.0...155.0
 1000 : (150.5...157.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 12.50

Speed rpm : 1105...1115

2nd rack travel in: 5.50

Speed rpm : 1200...1230

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 84...92

Testing:

Speed rpm : 100

Minimum rack travel: 9.40

Speed rpm : 300

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : 0.20

Torque control curve - 1st version

1st speed rpm : 1075

Rack travel in m: 13.50...13.60

2nd speed rpm : 700

Rack travel in m: 13.70...13.80

3rd speed rpm : 900

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 450

Pressure hPa : 960

Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 450

1st pressure hPa : -

Rack travel in m: 12.30...12.50

2nd pressure hPa : 455

Rack travel in m: 13.40...13.50

3rd pressure hPa : 360

Rack travel in m: 12.60...12.80

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 670

Speed rpm : 700

Del. quantity cm³/ : 158.0...162.0

1000 s: (155.0...165.0)

Aneroid pressure h: -

Speed rpm : 450

Del. quantity cm³/ : 123.0...125.0

1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 170.0...200.0

1000 s: (166.0...204.0)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 805AB
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-3
 Governor no. : 0 421 813 743

Customer-spec. information
 Customer : KHD

Engine : BF6L413FRC/513RC

1st version kW : 180.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 13.10...13.20
 Del. quantity cm³/ : 14.7...14.9
 100 s : (14.4...15.1)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40
 2nd speed rpm : 450
 travel mm : 2.60...3.20
 3rd speed rpm : 650
 travel mm : 4.70...5.30
 4th speed rpm : 1110
 travel mm : 8.20...8.40
 5th speed rpm : 1250
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1140
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h: 900
 Del. quantity : 147.0...149.0
 1000 : (144.5...151.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:

1st rack travel in: 12.10
Speed rpm : 1105...1115
2nd rack travel in: 5.50
Speed rpm : 1195...1225
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 84...92

Testing:

Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

Speed rpm : 300...520

TORQUE CONTROL

Dimension a mm : 0.10
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 13.10...13.20
2nd speed rpm : 700
Rack travel in m: 13.20...13.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 450
Pressure hPa : 900
Rack travel mm : 13.10...13.20

Measurement

Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 410
Rack travel in m: 12.90...13.10
3rd pressure hPa : 340
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

N20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600
Speed rpm : 700
Del. quantity cm³/ : 147.0...151.0
1000 s: (144.0...154.0)
Aneroid pressure h: -
Speed rpm : 450
Del. quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 805AC
 Injection pump
 Pump designation : PES6P110A720RS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1075PA850-3
 Governor no. : 0 421 813 743

Customer-spec. information

Customer : KHD
 Engine : BF6L413FRC/513RC
 1st version kW : 170.0
 Rated speed : 2050

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075
 Rack travel in mm : 12.90...13.00
 Del. quantity cm³/ : 13.9...14.1
 100 s : (13.6...14.3)
 Spread cm³ : 0.4
 100 s : (0.7)
 2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40
 2nd speed rpm : 450
 travel mm : 2.60...3.20
 3rd speed rpm : 650
 travel mm : 4.70...5.30
 4th speed rpm : 1110
 travel mm : 8.20...8.40
 5th speed rpm : 1250
 travel mm : 9.50...9.90

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1140
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1075
 Aneroid pressure h : 850
 Del. quantity : 139.0...141.0
 1000 : (136.5...143.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.90
Speed rpm : 1105...1115
2nd rack travel in: 5.50
Speed rpm : 1190...1220
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...520

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 12.90...13.00
2nd speed rpm : 700
Rack travel in m: 12.90...13.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 850
Rack travel mm : 12.90...13.00

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 360
Rack travel in m: 12.70...12.80
3rd pressure hPa : 340
Rack travel in m: 12.40...12.60

START CUT-OUT

Speed 1/min : 250 (270)

N22

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 490
Speed rpm : 700
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 806AA
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-4
 Governor no. : 0 421 813 745

Customer-spec. information
 Customer : KHD

Engine : BF6L513RC

1st version kw : 188.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : (1-60-120-180-240-300)

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 13.50...13.60
 Del. quantity cm³/ : 15.3...15.5
 100 s : (15.0...15.7)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40
 2nd speed rpm : 450
 travel mm : 2.60...3.20
 3rd speed rpm : 650
 travel mm : 3.30...3.90
 4th speed rpm : 1195
 travel mm : 8.30...8.50
 5th speed rpm : 1330
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1190
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Aneroid pressure h : 960
 Del. quantity : 153.0...155.0
 1000 : (150.5...157.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 12.50
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 84...92

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...550

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.50...13.60
2nd speed rpm : 700
Rack travel in m: 13.70...13.80
3rd speed rpm : 1000
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 960
Rack travel mm : 13.50...13.60

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 12.30...12.50
2nd pressure hPa : 400
Rack travel in m: 13.10...13.20
3rd pressure hPa : 330
Rack travel in m: 12.50...12.70

START CUT-OUT

Speed 1/min : 250 (270)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 600
Speed rpm : 700
Del.quantity cm3/ : 158.0...162.0
1000 s: (155.0...165.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm3/ : 123.0...125.0
1000 s: (120.5...127.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH J. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 817AA
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQW300...1150PA850-5
 Governor no. : 0 421 813 871

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 158.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

N25

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.70...12.80
 Del. quantity cm³/ : 13.6...13.8
 100 s : (13.3...14.0)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 2.10...2.50
 2nd speed rpm : 450
 travel mm : 3.40...4.00
 3rd speed rpm : 700
 travel mm : 5.10...5.70
 4th speed rpm : 1190
 travel mm : 8.90...9.10
 5th speed rpm : 1300
 travel mm : 10.00...10.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1160
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 136.0...138.0
 1000 : (133.5...140.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 119...127

Testing:
1st rack travel in: 11.70
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1270...1300
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 89...97

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...520

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.70...12.80
2nd speed rpm : 600
Rack travel in m: 12.70...12.90

START CUT-OUT
Speed 1/min : 250 (270)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY
Speed rpm : 100
Del. quantity cm³/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:
:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD
 Edition : 31.08.92
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 817AB
 Injection pump
 Pump designation : PES6P110A72ORS3104
 EP type number : 0 412 016 712
 Governor
 Governor design. : RQV300...1150PA850-5
 Governor no. : 0 421 813 871

Customer-spec. information
 Customer : KHD

Engine : BF6L513R

1st version kW : 142.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-50-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 12.00...12.10
 Del. quantity cm³/ : 12.3...12.5
 100 s : (12.0...12.7)
 Spread cm³ : 0.4
 100 s : (0.7)

2nd speed rpm : 300.0
 Rack travel in mm : 7.6...7.8
 Del. quantity cm³/ : 1.6...2.2
 100 s : (1.3...2.4)
 Spread cm³ : 0.4
 100 s : (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 2.10...2.50
 2nd speed rpm : 450
 travel mm : 3.40...4.00
 3rd speed rpm : 700
 travel mm : 5.10...5.70
 4th speed rpm : 1190
 travel mm : 8.90...9.10
 5th speed rpm : 1300
 travel mm : 10.00...10.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1160
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del. quantity : 123.0...125.0
 1000 : (120.5...127.5)
 Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 119...127

Testing:
1st rack travel in: 11.00
Speed rpm : 1190...1200
2nd rack travel in: 5.50
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 89...97

Testing:
Speed rpm : 100
Minimum rack travel: 9.40
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 320...520

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.00...12.10
2nd speed rpm : 600
Rack travel in m: 12.00...12.20

START CUT-OUT
Speed 1/min : 250 (270)

BREAKAWAY
1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY
Speed rpm : 100
Del. quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)

Remarks:
:
Check electrically unlatched starting
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APPLICATION

Combine-harvester